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ORIGINAL ARTICLES.

THE PREVENTION OF MASTOID EMPYEMA.[1]

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MUCH that is interesting and valuable has been written upon so-called "mastoid disease" and its treatment, but little or nothing on its prevention. This tends to spread abroad and foster the idea in the minds of the general profession that mastoid disease—*i. e.*, mastoid empyema and caries—is almost a necessary consequence of an otitis media, whereas quite the reverse is the truth. The subject naturally divides itself into the consideration of acute and chronic mastoid empyema.

It is highly probable that in every case of acute otitis media purulenta there is some involvement of the mastoid antrum in the inflammatory process; but this, like the acute inflammation in the tympanic cavity, will get well if not secondarily infected from without by improper treatment. Hence the prevention of mastoid empyema in cases of acute otitis media resolves itself into the prevention of secondary infection of the acutely inflamed middle ear.

It is the duty of the members of this Society to inculcate the idea that the proper treatment of an acute otitis media is largely negative, after either spontaneous or artificial opening in the membrana has occurred and a discharge set in. The inflammation of the middle ear being due to pathogenic germs (streptococci) in the middle ear, to which they have gained access from the naso-pharynx, the endeavor on the part of Nature, generally successful, is to afford them an exit from the tympanum by a spontaneous rupture of the membrana. Then a natural siphonic action sets in, which empties the mastoid antrum and saves the mastoid cavity, if this siphonic current is not stopped by irritative interference.

However, inspissation of the lateral portion of the exudate lying against the inner surface of the membrana, or previous thickening of the membrana, often delays and sometimes prevents spontaneous rupture of this diaphragm. Pain continues, the exudation is dammed backward toward the antrum, and if paracentesis is not now performed within twelve hours of the beginning of the earache, a mastoid empyema may be the result.

It follows, therefore, from what has just been said of the origin and progress of an acute otitis media, that all forms of inflation of the tympana should be carefully avoided in this disease, not only for the welfare of the ear already infected with pathogenic germs, but also in order to avoid forcing similar germs, into the, as yet, unaffected ear. In fact, in many cases of acute otitis media the disease in the middle ear is often a secondary result of the treatment of the naso-pharyngeal disease, rather than of the latter disease itself. It will be found, when an acute otitis media occurs a week after the ear on the opposite side has been inflamed, that this result is due to the numerous inflations of the tympana that, unfortunately, most of us have been taught to practise as part of a routine treatment of an acute otitis media. I have long since found it advisable *never* to inflate the ear, by *any* method, in either acute nasal or aural disease, because it has proved to be both painful and injurious.

I do not believe it is possible to abort an acute otitis media excepting by a paracentesis of the membrana in the early congestive stage. Sometimes congestion of the auditory canal and of the membrana undergoes spontaneous resolution, in spite of the ill-judged treatment it often receives. In acute otitis *dry heat* will never do any harm and may give relief. An instillation of ten drops of a warm, watery solution of carbolic acid[1] (2 per cent.) or of mercuric chlorid (1:10,000) may also give relief, if the congested membrana can endure the mechanical presence of such a column of fluid, which, I have observed, it rarely can. Such applications, however, tend to destroy staphylococci, always present in the auditory canal, and thus render the middle ear less liable to secondary infection through the perforation in the membrana when it occurs. As soon as the membrana is perforated and a discharge sets in, or even before this takes place, immediately after paracentesis, we should urge the medical attendant to insert simply a strip of iodoform-gauze or carbolic-acid gauze, an inch-and-a-half long by a quarter-of-an-inch wide, into the auditory canal, for antiseptic drainage-purposes, place a tuft of the same gauze in the concha, and

[1] Presented at the Twenty-eighth Annual Meeting of the American Otological Society, New London, Conn., July 16, 1895.

[1] Not with glycerol, as this neutralizes the effect of carbolic acid.

let the ear alone for twenty-four hours, when the same kind of dressing may be reapplied if the previous dressings are moist, or let alone for twenty-four hours longer, if they are dry. At no time do I syringe the acutely inflamed ear or put anything into it but the dressing mentioned, and I find that the middle ear heals rapidly and the perforation closes. We should strenuously diffuse the idea that all insufflations, moppings, syringings, and instillations, of anything, will now be irritant to the membrana and middle ear, and tend to bring about secondary infection.

We have all seen cases of acute otitis media, treated in the old way by putting various medicaments into the ears, turned into chronic cases, both with and without mastoid involvement; whereas an acute otitis media properly treated is never followed by mastoid involvement, or a continuance of discharge from the ear, but gets well in five or six days.

Since January of this year I have seen in consultation six cases of mastoid empyema, one chronic and five acute, *all* the result of improper treatment of the primary otitis media, by syringing with hydrogen dioxid, insufflation of boric acid, inflation of the tympana, etc.

The members of this Society should spread abroad the valuable knowledge that if dry heat gives no relief to pain, then the only other proper thing to do in acute otitis media is promptly to incise the membrana, preferably under ether. Then drain the canal antiseptically as described, and let the ear alone. We thus can prevent mastoid empyema. Schwartze was the first to sound the note of warning against secondary infection of the mastoid by insufflation of boric acid in acute otitis media, and Gradenigo and Pes[1] have recently written what must ever stand as a classic guide in the rational treatment of acute otitis media, in which they urge what in substance I have presented in this paper. Lermoyez and Helme,[2] too, have shown that even the cotton-tuft on the cotton-holder, twisted by the cleanest of fingers, is loaded with staphylococci, and should be subjected to sterilizing processes before being inserted into the ear.

In the face of all this wise teaching, it is most regretable that many of the younger aurists and some general practitioners are apparently vying with one another in their devices for pumpings, syringings, blowings, swabbings, etc., applied to the naso-pharynx and middle ears in acute otitis media. It is not surprising, therefore, that the number of cases of acute mastoid empyema is increasing, and that reports of such cases come in from all quarters, the writers and reporters apparently unconscious that they are detailing the secondary results of their own irritant and infectious treatment, applied either by way of the naso-pharynx or external ear, or by that unfortunately infectious procedure, in the absence of suppuration beneath the mastoid tissues, the so-called Wilde's incision, and, in some cases, by setons, even in this era of antisepsis.

If acute mastoid empyema is not prevented, necessarily we must all continue to observe chronic otorrhea and chronic mastoid empyema. Here, too, the treatment resolves itself into one directed primarily to the middle ear. Chronic mastoid empyema cannot be cured until the chronic tympanic purulency is arrested. Mastoid trepanation in chronic mastoid empyema, without exposure of the middle-ear cavity and removal of carious and necrotic tissues, is valueless in all instances, even in intracranial lesions, for if the tympanic cavity is allowed to remain more or less full of the carious and infective tissues from which the mastoid caries, the sinus-thrombosis, or the cerebral abscess has arisen, not one of these diseases is radically cured until the infectious nidus in the middle ear is destroyed.

Mastoid trepanation alone does not check chronic otorrhea. The necrotic tympanic tissues must be removed before the chronic purulency is checked. This is a common observation, not only in mastoid caries, but in intracranial, cervical, and pharyngeal lesions of otitic origin. No operation on the neck or within the cranium in such cases, though it may immediately save the life of the patient, may be of permanent value so long as necrotic tissues are left in the middle ear. This fact aurists should keep before the minds of the profession. But far better than any directions for the cure of mastoid empyema is the proclamation of methods of prevention.

[1] Archiv f. Ohrenheilk., Bd. 38.

[2] Annales des Maladies de l'Oreille, vol. xxi, January and June, 1895; also Hamon du Fougeray, Ibid., June, 1895.

REMOVAL OF THE APPENDAGES AND LIGATION OF THE UTERINE ARTERY TO THE UTERO-CERVICAL JUNCTION.

Report of Forty-five Cases of a New Operation.

BY F. BYRON ROBINSON, M.D.,
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I introduced the operation of removing the uterine appendages and ligating the uterine artery to the utero-cervical junction about two years ago. The technique consists in ligating the appendages and then snipping them off. An aneurism-needle, armed with a double ligature, is then passed through the broad ligament at the cervico-uterine junction on the inner side of the uterine artery. The one ligature is tied along the side of the uterus, including the perpendicular

arteries of the uterus, the Fallopian tube, and the round and ovarian ligaments. The other ligature is tied on the broad ligament, including the infundibulo-pelvic ligament. Another method consists in ligating and removing the appendages, and then simply ligating the uterine artery once or twice as it courses through the broad ligament by the side of the uterus as low down as the neck.

The first method is the best, as it results in atrophy not only of the bloodvessels, but also of the nerves and ganglia. I have ligated the uterine artery down to the cervico-uterine junction in nearly all of my forty-five cases. No symptoms of tissue-death in the uterus have so far appeared in any of the cases. In some pain is severe for from twenty-four to forty-eight hours, but it seems due to trauma by the ligatures on large numbers of nerves and ganglia. This pain can be quieted with gr. $\frac{1}{16}$ morphin once or twice, for that of greatest severity is generally over in fifteen hours. This operation can be widely applied in surgical gynecology. It produces sufficient shock on the circulatory and nervous apparatus quickly to cause atrophy of growing uterine myomata. The effect of ligating the uterine arteries as they course through the broad ligament is to cause rapid atrophy of the endometrium, checking endometrial secretions and hemorrhage. The pelvic floor is preserved intact by this operation, obviating the danger of vaginal hernia. A vaginal hysterectomy, performed by Dr. Lucy Waite, with my assistance, was followed in several months by a vaginal hernia.

The operation under consideration brings on the menopause rapidly. The latter followed in two months in one case. The operation leaves a functionless, atrophic uterus, in normal position, which so far among my patients has occasioned no trouble. This report is based on forty-five operations, performed during the last twenty-six months. In several of the cases I assisted Dr. Lucy Waite and Dr. Bertha Van Hoosen, and include these in the report. The utility of the operation resides in the following points: (1) it checks hemorrhage; (2) it arrests menstruation; (3) it elevates the uterus; (4) it causes shrinking of the uterus; (5) it avoids the removal of uterine myoma; (6) it avoids vaginal hernia.

We have proved that the operation is suitable to every one of the foregoing six propositions. Dr. Van Hoosen reports that menstruation has not reappeared in any of the cases in which I assisted her in operating. I know of not a single case in which Dr. Waite and I operated in which menstruation continued. We removed the appendages and tied the uterine arteries in a patient thirty-seven years old, with a myoma extending above the pelvic brim. Three months later the tumor was decreased in size one-half; eight months later the uterus is what I should term almost normal in size. The operation causes shrinking of the inflamed uterus, which is nearly always associated with suppurating appendages, and as a result excessive secretions are checked. I have, time after time, by subsequent examination, proved the shrinking or atrophying of the large, hard, inflamed uterus. The operation elevates the retroverted uterus, and maintains it in position. It is superior to hysteropexy, as it leaves a movable uterus.

Eight months ago I operated with Dr. Verity, of Chicago, in a case with diseased appendages, and with a large, hard, retroverted, inflamed uterus. We removed the appendages and tied the uterine arteries almost down to the cervix. Eight weeks subsequent to the operation I examined the patient, and the uterus was in a distinctly normal position. It was movable, and shrunken at least one-third in size. As the months go by I am examining the patients operated on. I find that the large uteri, with myomata and subinvolution, have all shrunk to normal and less than normal. Large uteri that required space outside of the pelvis are now equal to a normal uterus, or even less in size. Menstruation has not ceased entirely in every one of the forty-five cases, but in only two or three is there a slight flow, and in such cases some old inflammation has recurred. The removal of appendages does not always cure a uterus infected and chronically inflamed; but the operation is applicable to the six propositions stated. Two objections may be raised against the operation: (1) the danger of gangrene; (2) the ligation of so much tissue.

I do not consider it an objection that one might penetrate the bladder with a ligature-armed needle, or that a ureter might be included in the ligature, as any other operation is encumbered with similar dangers. The idea that the ligatures might become infected and lead to subsequent fistulæ is not a serious objection. I would suggest that the ligature which includes the broad ligament should not include the Fallopian tube with its mucous membrane, as that might enhance the chances of suppuration. The needle could be passed just beneath the tube. This method ought not to protract the operation more than ten minutes. Among forty-five cases one patient died from the results of the operation. This patient was a weak and worn-out woman of thirty-seven years of age, who had had a myomatous tumor for six years. The broad ligament was tied in sections, and the tumor shrunk so rigidly in four days that it produced a kink in the bowel by dragging on it. The bowel was not completely obstructed. The patient went on well for four days, after which she suddenly sank in a few hours, without any symptoms. An autopsy revealed the fact that in four days the tumor had shrunk enor-

mously, and a kink was found in the bowel. The debility of the patient and the worn-out nervous centers were to blame for this death. The other death among the forty-five cases was due to urinary suppression on the sixth day in a woman who had almost flowed to death during six years with a large uterine myoma. The case progressed well for six days after the operation, when the urine ceased to be secreted, and the patient died about thirty-six hours later.

CLINICAL LECTURE.

VESICULAR EMPHYSEMA.

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LET us begin the study of this case with a little practice in the art of observing symptoms. The child is an Italian who came to this country in infancy. The mother said that when still an infant the child had difficulty in breathing and had spells of wheezing, and at times of coughing. She has continned to present these symptoms, and now, at the age of eight years, although fairly well developed, shows some peculiarities of interest in the study of her disease.

You will notice that the child has a short neck, owing to the encroachment of the trunk. She is somewhat round-shouldered; the scapulæ project; the ribs arch out under the scapulæ; and the chest in front is quite round. The ribs are comparatively horizontal and the intercostal spaces are ill defined. You will note further that the child breathes hurriedly, and, in spite of this, oxygenation is imperfect, as shown by the lividity of the lips and face, which is apparent even through the tawny Italian complexion. The abdomen is somewhat prominent and the type of respiration is largely abdominal, the chest being comparatively fixed. All this shows that Nature is doing her best to get air into the lungs and make oxygenation as nearly perfect as possible, but she, nevertheless, fails. Coming near the child you can hear the wheezing, and on auscultation of the chest there is marked sibilant breathing and occasionally sonorous breathing. Listening still more closely one can detect a relative loss of vesicular character in the respiration. There is to be heard over the larger tubes the blowing sound which is normal, but this sound is more diffused in her case, as it is not masked, as it naturally is, by the finer sounds of vesicular breathing.

Here is an instance in which a diagnosis can be made by the direct method. To make it still plainer that the chest is distended with air, let me practise percussion. Note how marked the resonance is. The condition is that of a chest full of air in a child embarrassed for want of air. The paradox can be explained only by adding that the lungs are filled with residual air, not with air coming and going with each respiratory act. It is an instance of vesicular emphysema, a disease not often seen in childhood; but when it does occur early in life, before the bones have became firm, we see the classic picture of a barrel-shaped chest. Besides emphysema, the child has a certain amount of bronchitis, at present limited, but at times becoming greater. She has also asthma. This group, emphysema, bronchitis, asthma, is frequently found. Any of the three may come first. Which has been the first here? Undoubtedly the emphysema. In some lungs there is a faulty development or a fibroid degeneration of tissue, so that the lung loses its elasticity, and, not being able to empty itself, the air-cells remain constantly distended, while only a modicum of air passes in and out. In such cases emphysema comes first, without any predisposing bronchitis or asthma. The condition is sometimes hereditary, sometimes acquired, but not susceptible of perfect explanation. The results of this condition of the lungs are hence easily understood. The ribs are pushed out into a nearly horizontal direction; the intercostal spaces may actually bulge. The abdomen and neck are encroached upon in the efforts that Nature makes to enlarge the capacity of the lungs.

After a time the degeneration progresses so far that numberless little air-sacs fuse together, not from the suppuration of their walls, but from slow, non-inflammatory degeneration. This process may go on throughout both lungs, or one lung or even a part of a lung may be more particularly involved. Sometimes this fusion proceeds to the formation of air-spaces as large as the end of the thumb, and, in spite of their size, these air-spaces have very little function in respiration. Meantime the capillaries of the lung become obstructed because of the pressure upon them by the air-spaces, and also from disease of the vessel-walls. In consequence of this obstruction to the free flow of blood through the lungs, the right side of the heart becomes distended, and, later, the viscera generally become engorged with venous blood. Thus there results passive congestion of the liver, kidneys, stomach, and intestines, while the extremities are blue and the lips livid. The lack of oxygen gives rises to numerous changes throughout the body, and the fibroid degeneration that occurred in the lungs primarily may often also be observed in the liver, kidneys, and various other organs.

The treatment for this condition, so far as drugs are concerned, I shall not mention. The child should receive appropriate medication for the asthma and bronchitis as they may occur. There is no medicinal treatment for emphysema. The pneumatic cabinet has been suggested, allowing the patient to breathe condensed air and expire into a partial vacuum. The result, however, is questionable. The child should lead a quiet life. Exercise only aggravates the difficulty, increases the tension on the right side of the heart, and leads to the train of symptoms depending on venous congestion.

CLINICAL MEMORANDA.

GUNSHOT-INJURY OF THE BRAIN[1]

Involving the Left Third Frontal Convolution, without Aphasia.

BY C. S. HOFFMAN, M.D.,
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D. F., aged twenty-eight years, on the 22d day of October, 1894, while in a state of temporary melancholia, attempted to end his existence by shooting himself through the head. I saw him in a few minutes

[1] Read before the West Virginia State Medical Association, June 28, 1895.

after he was shot. He was then sitting upright in a chair, with blood flowing from a wound in the left temple. He was pale, and evidently suffering from shock. His mind was dazed. He recognized me, however, called me by name, but was unable to tell correctly how he was hurt, or where he boarded, but when the name of the house at which he boarded was suggested he said yes, that was the place, and without any hesitancy distinctly mentioned the proprietor's name.

Examination revealed a pistolshot-wound in the left temple, into which I could introduce the end of my little finger. There was no paralysis. The man was able to walk with little assistance to his boarding-house, about one square distant. I had him put to bed, and cold applied to his head, thinking from the position and nature of the wound that he would soon join the majority. In two hours I saw him again. He still recognized me, called my name without any hesitancy, also recognized other persons in the room and called their names. His pulse and respiration were about normal. His condition up to this time was that of a person suffering from concussion instead of injury to the brain. There was still no paralysis. With my finger and probe I detected loose bone on the inside of the skull, but I was unable to locate the ball. About a teaspoonful of brain-substance had oozed from the wound. Dr. Spear, of Cumberland, now saw the case with me. We decided upon an operation. Accordingly, as soon as everything could be made ready the patient was chloroformed, and with the assistance of Dr. Spear, of Cumberland, and Dr. Hall, of Keyser, I enlarged the wound in the scalp and exposed the skull. There was almost a round hole in the external table of the skull, but the inner table was badly broken, and some of the fragments of bone were loose and driven in the brain, while others were partially attached to the skull and dura mater, their free rough edges being turned in upon the brain. These fragments were all removed, and the edges of the skull smoothed off. Search was made for the ball, but it could not be located, although I passed a probe four inches into what I supposed was the track of the ball, and also passed my little finger in, but without success. The wound was cleansed, dried with iodoform-gauze, and then a piece of iodoform-gauze was passed well into wound for drainage. The wound was dressed antiseptically, but suppuration took place in the scalp-wound, and the dressing had to be changed every day. The wound healed by granulation. There was no appreciable pus from the interior of the skull.

The patient remained under my care from October 22d, the time of the accident, until November 15th, in all twenty-four days. The highest temperature was 101°. This occurred on the fourth, sixth, and twelfth days after the injury. The highest pulse-record was 106, but the average was about 80. On and after the thirteenth day from the injury pulse and temperature remained normal. The patient was very restless for the first three days, requiring at times restraint to keep him in bed. For this morphin sulphate, chloral hydrate, and potassium bromid were given with good effect. After this time the patient became somnolent, passing urine and feces in bed. He was, however, easily awakened to take milk. Five days after the injury he could give intelligent answers to some questions. About a week before he left my care he could sit up, and began to take interest in what was passing in the room, and would usually tell when he wanted to pass urine and feces.

The place of the wound is readily discernible. While ossification seems to have occurred, there is a depression where the ball entered. The entrance of the ball, as can be seen by this depression, is about one-and-a-half inches posterior to the external angle of the left orbit, and about three-quarters of an inch above a horizontal line passing through the external angle of this orbit, making the wound very near the center of the temple, and directly over the part localized as the center of speech. The course of the ball was slightly upward and backward. In connection with the wound in the left temple it is to be noted that the man is left-handed. The pistol with which the wound was inflicted is a thirty-two caliber. I here show you six pieces of bone, and regret that I have either lost or mislaid the original ones. These, I feel certain, are about the size of the pieces removed, and will give an idea of the extent of the injury to the skull. Laying these bones side by side they will cover at least one square inch of surface. The pistol was evidently held very close against the head, as the hair was burned, but there were scarcely any powder-stains in the skin. Considerable powder-stain was, however, present in the bone and brain.

It is not my purpose to enter into a general history or a discussion of the treatment of gunshot-injury of the brain, as this is accessible through our text-books on the subject; but there are some very interesting features of this case to which I desire especially to direct attention, viz.: That the prognosis in this case, without an operation and the removal of the pieces of broken bone, must have been fatal; that the result would indicate that it was good surgery not to make too great an effort to extract the ball; that a man can shoot himself in such a vital spot as this and not be instantly killed; that the man was not even rendered wholly unconscious; that he made an excellent recovery, and now, at the expiration of eight months, is apparently well, and able to transact business and do bodily labor, although he still carries the bullet in his brain, and lost at least a tablespoonful of brain-matter; that there was no paralysis of any member of the body; that there was no evidence of aphasia, although the ball must have injured the third left frontal convolution of the brain, and in our efforts to remove the pieces of bone we also must have injured this convolution. This is a matter of interest to which I would especially call attention. It is true that while the man was suffering from the acute inflammatory effects of the traumatism he could not answer intelligently, but there was no time when he was conscious that he had any difficulty in pronouncing words or forming sentences. At times he was a little absent-minded. Before he was injured he was always manifesting an uneasiness about succeeding in life. Since the accident I think he shows less of this disposition.

In the great majority of mankind the center of speech is located in the left hemisphere of the cerebrum and in the third frontal convolution; still there are exceptions, as cases have been observed of left-handed persons who lost their power of speech after a lesion of the right hemisphere. As this man is left-handed, it is fair to ask, May not the center of speech in this man be located on the right side, and may not this explain the absence of aphasia?

TWO CASES OF BILATERAL CASTRATION FOR ENLARGED PROSTATE.

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WHILE the subject of castration for enlargement of the prostate is exciting so much discussion, the report of the following cases may not be without interest:

CASE I.—J. B., aged seventy-seven years, was obliged to resort to the use of the catheter eighteen years ago, on account of an enlarged prostate and the consequent inability to pass his urine. The catheter was used for thirteen years, during which time he was never able to pass urine without its aid. During the last year of his catheter-life increasing difficulty was experienced in passing the catheter, until it finally became impossible to enter the bladder with any instrument. At this juncture—five years ago—a suprapubic cystotomy was performed and an artificial urethra established. For three or four years immediately following this operation the condition of the patient seemed satisfactory. Then he commenced to complain much of pain; his cystitis grew worse, and repeated rectal examination established the fact that the prostate was constantly increasing in size. At this time I advised castration, which was performed at the Presbyterian Hospital, May 14, 1895. At the time of operation the prostate was as large as a cocoanut.

On June 20th, thirty-six days afterward, Mr. B. passed a small stream of urine by the urethra, the first time for eighteen years. He has continued to do this every day since, with increasing size of stream, and for the past week he has only used his suprapubic urethra night and morning, when the bladder was irrigated. As nearly as I am able to determine by rectal examination, the prostate has diminished in size about one-half, the cystitis is much improved, and the severe pains are practically gone.

CASE II.—Mr. A., aged fifty-one years, entered the Presbyterian Hospital June 18, 1895, and gave the following history: On and after December 8, 1894, he was unable to pass his urine without the aid of a catheter. About the middle of December the right testicle became inflamed and suppurated; two weeks thereafter the left testicle also became inflamed and suppurated. He had been confined to his house constantly, and to his bed the major part of the time after the first attack in December, in consequence of the severe pain both in the testicles and bladder.

When Mr. A. entered the hospital he was much emaciated, and both testicles were enlarged, indurated, and nodular. On the right side of the scrotum were two fistulous tracts, and on the left one discharging pus. There were two ounces of residual urine, which was ammoniacal and contained a considerable quantity of pus. Both lobes of the prostate were very decidedly enlarged. The inflammation of the testicles was evidently tuberculous, and this fact, considered in connection with his enlarged prostate, made me advise castration, which was agreed to and performed June 23d. Recovery was uninterrupted. In two weeks the man was walking about the hospital, almost wholly free from pain; the urine had become acid and almost clear; a catheter was no longer necessary; and the residual urine had entirely disappeared.

On July 18th, by rectal examination, the left prostatic lobe was scarcely to be felt, while the right was much reduced in size. The patient was discharged in excellent condition.

Although I undertook both of these operations with some degree of misgiving as to the ultimate good to be attained, the results have been most satisfactory both to the patients and to myself. The decided improvement in the cystitis, the disappearance of the pain, the ability of the one again to pass urine by the urethra after eighteen years of absolute cessation, and the disappearance of the residual urine in the other, with atrophy of the prostate, are conditions concerning which I believe there can be no doubt.

It would seem that after castrating thousands upon thousands of women in the prime of life, often, I fear, upon the slightest pretext, it is hardly consistent to hold up our hands in horror at the idea of castrating some men at an advanced age for the relief of an otherwise incurable and most distressing condition, if the operation should offer a reasonable hope for a permanent cure.

459 VAN BUREN STREET.

VESICO-VAGINAL FISTULA—SUTURE OF BLADDER WITH CATGUT.

BY J. J. BROWNSON, M.D.,
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MRS. D. L. F., aged thirty-two years, the mother of four children, came under my care to be operated upon for a vesico-vaginal fistula. Her history was good, with the exception of some difficulty in micturition during childhood, the precise nature of which I was unable to learn. The story of the case as narrated by the patient is as follows: About two years ago she lived upon a farm in Minnesota, and her home was about ten miles from the nearest village. While residing at that place she was confined with her fourth child. The labor passed all right, but she had retention of urine following it. The physician in attendance, after visiting her for several days for the purpose of using the catheter, said that he would be unable to attend her any longer, and, as she would not or could not use the instrument herself, he made an opening from the vagina into the bladder through which the urine drained away.

The constant annoyance of the infirmity caused the woman to seek relief. Accordingly she was sent to the Mercy Hospital in this city to be prepared for operation.

Upon examination the urethra was found patulous and seemed natural. There was a fistula about three-fourths of an inch long in the vesico-vaginal septum. The uterus and vagina were otherwise normal.

The patient was taken to the operating-room, and, with the assistance of Drs. Boothby, McCarthy, and A. Staples, steps were taken to close the opening. The woman was placed in the usual position and a sound passed into the bladder up to the fistula to serve as a guide, while the tissues of the vagina and bladder were pared funnel-shaped so as to make a good-sized denuded surface on the vaginal side. When all was prepared it occurred to me that it would be a good idea to unite the mucous membrane of the bladder with catgut, and

this was done by means of a continuous suture. The tissues of the vagina were then sutured together with four silver wires. Having no sigmoid catheter a soft-rubber one was fastened in the bladder, and the vagina was packed with iodoform-gauze.

The after-treatment of the case progressed favorably until the third night, when the catheter slipped out. On the next morning a pint of urine was drawn off and the catheter reinserted; but it did not stay in well; so after the first week the retention of the instrument was abandoned altogether and the water drawn twice a day.

On the eighth day the urine was tinged with blood and remained so for two days. I was unable to account for this unless it was from the disintegration of the catgut stitches.

Nothing unusual presented itself from this time on. At the end of the third week the silver wires were removed. The wound had healed solidly. Not a drop of urine had escaped. In fact, after the stitches were removed it was difficult to see the exact site of the closure.

The patient was at this time requested to urinate in the natural way, but she maintained that she could not. The catheter was accordingly passed for one week longer, when, as the woman again refused to attempt to micturate, a large glass dilator was introduced into the urethra and allowed to remain for several minutes. Following this she was able to pass water, and has not complained of any trouble since. She is at present in good health, and, as it is several years since the operation was performed, the relief may be considered as permanent.

Of course, one cannot form conclusions from one case, but I think the suture of the bladder with catgut is a good feature, for the reason that it forms a double joint, preventing leakage of urine, and thus giving the vaginal tissues opportunity for union, while the possible objection, that should any of the catgut remain unabsorbed a calculus might result, would not seem warranted by the outcome of this case.

TOXICOLOGIC NOTE.

POISONING BY LYSOL.

BY A. J. COMSTOCK, M.D.,
OF VENTURA, CALIFORNIA.

THE following facts in a case of accidental poisoning by lysol, occurring to one of my patients recently, are worthy of record:

The patient is a healthy woman, twenty-four years of age. Three days after her confinement she was given, by mistake of her nurse, one-and-a-half tablespoonfuls (fully six drams) of lysol, instead of the laxative ordered. The drug was taken early in the morning upon an entirely empty stomach, but was diluted with two ounces of coffee. The woman was immediately seized with violent burning pain in the mouth, throat, and stomach. It was forty-five minutes before a physician reached her, and in the meantime nothing in the way of a diluent or emetic had been administered, and vomiting had not occurred. Not being in town myself, another physician was called. He reached the patient forty-five minutes after the accident and at once administered oils, eggs, diluents, and emetics. She was then in a partially comatose state, very pale, perspiring profusely, and with the muscular system in a state of complete relaxation. Respiration was slow and shallow and the pulse imperceptible. As emesis did not readily occur, the physician returned to his office for a stomach-pump, but upon his return found the woman vomiting freely. The poison had then been retained two hours and forty-five minutes. After the vomiting consciousness partially returned, but the patient remained very weak. I first saw her three hours after the poison had been swallowed. She was then still partially unconscious, with great muscular relaxation, a very weak and rapid pulse, and the pupils widely dilated. I at once administered another emetic (gr. xx of ipecac in powder) and large quantities of warm water, until free emesis occurred, twelve minutes afterward. The woman was then given small and frequently repeated doses of magnesium sulphate until free purgation was produced. The after-treatment consisted of flaxseed-tea, bismuth, and restricted diet. The subsequent gastritis was slight, but for forty-eight hours there was partial suppression of urine, with albumin present in large amount. The albumin disappeared on the fourth day and the secretion of urine became re-established. It is now a week since the accident and the patient is apparently fully convalescent.

MEDICAL PROGRESS.

Fracture of the Lower Cervical Spine, with Coma.—BELL and EASTERBROOK (*Edinburgh Medical Journal*, July, 1895, p. 38) have reported the case of a laborer, thirty-one years old, who fell backward from the top of a loaded haycart, landing on the back of his head in a field. When found, lying on his back with his feet toward the cart, he was conscious and able to speak intelligently, complaining of pain between the shoulders, but was absolutely unable to move the trunk and limbs, with the exception of the shoulders. He remained in this condition for twenty-four hours, with slight twitchings of the shoulders and a considerable discharge like white of egg, stained with blood, from the mouth, independent of vomiting. He then became feverish and delirious, and in two or three hours lapsed into a state of apparent coma. Neither urine nor feces had been voided after the accident. Later there was incontinence of urine. The temperature rose to 106.5°, the pulse to 140, the respiration to 40 per minute. The patient gave vent to an occasional short cry, frowned slightly when the face was pinched, and made a faint effort to open the partially closed eyes when called loudly by name or when a bright light was held before him. There was complete loss of motion and sensation in the trunk and extremities; the face and neck were sensitive to touch and pain. Motor power was present in the muscles of the face and lower jaw, and in those of the neck connected with extraordinary respiration. The paralyzed muscles were flaccid. The superficial and deep reflexes were absent, with the exception of the cremasteric and conjunctival. The pupils were equal, markedly contracted, and non-reactive to light. There were also evanescent priapism, overflow incontinence of urine, relaxation of the anal sphincter, incontinence of feces, and a purely reflex deglutition. Lividity was easily

induced by pressure, and the toes were slightly glossy. The respiration was diphragmatic, aided by the muscles of the neck. At each expiration there occurred protrusion of the upper part of the abdomen, an indrawing of the lower intercostal spaces, a dragging down of the larynx and root of the tongue, a dilatation of the alæ nasi, and a tilting up of the chin. The expiration was sudden and gasping, the upper part of the chest rising with a jerk. The urine contained a slight amount of albumin. As the man lay supine, with his head flexed upon the pillow, a prominence could be felt above the last cervical spine, pressure over which elicited a pained frown. The prominence disappeared when the patient was turned on his right side. On digital examination of the posterior laryngeal wall, a slight ridge was detected opposite the root of the tongue. Examination of the ocular fundi disclosed no abnormality. Despite treatment with extension, ice-bags, leeches, and inhalations of oxygen, the patient failed to rally. Upon post-mortem examination a thin layer of extravasated blood was found between the epicranial aponeurosis and the pericranium, especially marked between the occipital and left parietal eminences. A very small quantity of blood-stained fluid escaped from the foramen magnum in removing the brain. No gross lesion of skull or brain was present. The spine presented no deformity. On dissection an extravasation of blood in the soft parts behind the lower cervical spine was found. In the spinal canal an extradural extravasation of blood, extending from the foramen magnum to the sixth dorsal vertebra, was present, being most marked in the lower cervical region. The body of the seventh cervical vertebra was the seat of a comminuted fracture and crush, the spinal cord being firmly nipped by the lower fragment, which was overlapped anteriorly by the upper.

THERAPEUTIC NOTES.

The Treatment of Diphtheria with the Antitoxin.—FÜRTH (*Münchener medicinische Wochenschrift*, 1895, No. 30, p. 689) reports the results obtained at the medical and surgical clinics at Freiburg in the treatment of 100 cases of diphtheria with the antitoxin between October 1, 1894, and June 5, 1895. During this period 115 cases came under observation. Of this number, fifteen were not treated with the antitoxin, two being received in a moribund condition, and the remaining thirteen from economic reasons. In all of the latter recovery ensued. Of the 100, bacteriologic examination was made in fifty-five, and diphtheria-bacilli found in fifty, rarely in pure culture but often associated with staphylococci and mostly with streptococci. In five cases diphtheria-bacilli were not found upon a single examination. In conjunction with the injection of the antitoxin other measures in usual employ at the clinics were not omitted. Thus, the air of the wards containing the severe cases was kept constantly moist by means of the steam-spray; local applications or insufflations of precipitated sulphur or of chinolinbenzyl rhodanate were made three or four times a day; children able to do so used potassium chlorate or potassium permanganate as a gargle, and inhaled frequently a solution of carbolic acid; an ice-collar was applied; bits of ice were swallowed when pain was present; and in cases of involvement of the nose irrigation of the nares with antiseptic solutions was practised. Among the 100 cases thus treated there were twelve deaths. The mortality from 1889 to 1894, with ordinary treatment, fluctuated between 31 and 49 per cent., averaging 39 per cent. The same average existed during the seven months of the year corresponding to the period during which the antitoxin was used. Forty-three of the 100 cases presented laryngeal involvement, and thirty-one required tracheotomy. Among the last number there were eleven deaths, 35.4 per cent. In previous years tracheotomy had been required in 46.2 per cent. of the cases, with a mortality of 70.4 per cent. The opinion is expressed that the antitoxin is a specific in the treatment of diphtheria with which no other therapeutic measure is to be compared.

The Treatment of Electric Shock.—The Berlin correspondent of the *Medical Press and Circular*, July 24, 1895, p. 84, quotes from the *Pharmazeutische Centralblatt* the following procedures to be adopted in cases of injury from powerful electric currents: The current should be shut off at once if the means are at hand, and the person called upon understands how to do it. If this cannot be done, care should be taken not to touch the injured person's body with the hand. If no India-rubber gloves are at hand, the body should be dragged away from the wires by grasping the clothing, or the coat should be taken off and folded (a dry cloth may be used for the purpose), when the injured person may be grasped through it and dragged away. When it is not possible to remove the injured person from the wires, that part of the body should be raised that is in contact with the earth or the wire from it, using the covered hand. This will break the current, and it will generally be possible then to get the body away. If this cannot be done, a dry cloth should be placed between the body and the ground, and then the body disentangled from the wires. If the body is freed from the wires, all the clothing should be removed from the neck and the injured person treated as one drowned. The mouth should be opened and the tongue covered with a cloth and grasped. The latter is pulled forward and gradually allowed to fall back. This movement should be repeated sixteen times a minute. Care should be taken that the root of the tongue is thoroughly moved. The bystanders should not be allowed to give the injured person spirit or wine.

The Treatment of Insolation with Quinin is recommended by BINZ (*Deutsche Milit.-ärztliche Zeitschr.*, April, 1895; *Berliner klin. Wochenschr.*, No. 29, p. 643), both from theoretic considerations and from the favorable results obtained by Anglo-Indian physicians. The best preparation is the bichlorid, which appears in fine colorless crystals readily soluble in water. The solution is strongly acid, but when injected into the corium causes no pain. The solution should be of such concentration that a syringeful contains gr. 3¼. This dose may be frequently repeated.

℞.—Quininæ bichloridi . . . ʒijss.

Solve in aquæ destillatæ ʒj. Filtra. The solution equals a volume of ʒx.

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MAX NORDAU AND DEGENERATION.

Is it possible that in Max Nordau we have a real prophet calling to us in the wilderness, or have we only a fakir? These alternatives will be, and are being, answered each in the affirmative, for Nordau has at least the fortune of having caught the popular eye; the merit of having divided opinion; and, perhaps, may have the strength for yet founding a "school." In all these respects he is thoroughly up to date. There is enough of audacity and sensationalism in his views to meet even the demands of this "degenerate" age; enough of a spice of "mysticism" and obscurity in his criticism to keep him well abreast of all the symbolists galore; and enough of dogmatism and ferocity in his expression of opinions to put him well on a level with the egomaniacs. In other words, Max Nordau is, as he is so fond of describing others, somewhat *fin de siècle*.

But we take Max Nordau seriously—(a somewhat difficult thing to do in places)—and we think that we find in him some golden utterances as well as some obvious solecisms. The novelty—perhaps even the originality—of this writer consists in the fact that he has made a feint of devoting the methods and the data of the medical sciences, especially pathology and psychiatry, to the elucidation and correction of some of the prevailing tendencies and errors in art and literature. He has cast his book in the form of a medical treatise. The very boldness of this scheme has in a measure defeated its object, because it is evident, upon a close reading of the work, that neither the subject nor the author himself was yet ripe for such an enterprise. The grave defects of the scheme are, first, that the contemporary sciences of criticism and pathology have not yet advanced sufficiently to supply the necessary data; second, that they possibly never will advance thus far; third, that they have so little in common that they can play but little mutually into each other's hands; and, last, that Max Nordau, although he apparently has encyclopedic knowledge, has not yet attained that mastery of himself that would render him either a safe scientist or critic.

Let us consider these points. The science of criticism—if it is a science—is yet far from being established upon a satisfactory foundation. The best proof of this is found in the fact that in our present age glaring errors of taste and judgment in letters and art are exceedingly rampant. It is against these that Nordau wages incessant war. In a highly critical age such warfare would be uncalled for, because if criticism were a science, established upon secure foundations, as chemistry and astronomy are sciences, this ruck of contemporary literature would have been stifled in its birth. As chemistry and astronomy purify themselves constantly by rejecting error, so would literature if it had a science of criticism.

As for psychiatry, which is the branch of pathology upon which especially Nordau depends for his principles, it is obvious to all anthropologists that the time is yet far distant when this science will be able to dictate terms even to jurisprudence and sociology, much less to such a recondite subject as criticism. To attempt it now is premature; and the attempt must give Nordau's book the appearance of merely a pseudo-scientific treatise. The disguise cannot escape the penetrating eye of the student, and this is the gravest reproach that can be brought against Nordau.

The second defect of such a scheme is that it demands more than either of these sciences may ever be able to contribute. The purest ages in art and literature received no aid from either criticism or psychiatry. If the time ever comes when the cultivation of these humanities shall depend upon the warning voice of psychiatry, or even the support

and defence of a scientific criticism, then the history of humanity must reverse itself. Criticism is no more productive than is psychiatry itself; both deal rather with aberrations from the normal type. They are themselves necessary evils. Even in its broadest sense, that in which criticism aims to point out both merits and defects, it has never yet proved itself able in a crisis to prevent the deterioration of literature. It did not do so in the critical senile periods of Greek, Roman, and Hebrew literatures. We do not say that it may never be able in the future to do this; we hope, on the contrary, that it may. But we deal with facts.

Again, criticism and psychiatry have little in common. In spite of Max Nordau, we do not believe that the deteriorated art and literature of the present day are the products exclusively of hysterics, neurasthenics, and paranoiacs. The attempt to prove that they are is the most astounding solecism of the season. In this thesis Nordau shows plainly the tendency of the extremists of the cult of Lombroso. He seizes upon the stigmata of hysteria and degeneration, which he thinks he finds in every line of every rhapsody of every poor devil poet and novelist on the continent of Europe, and pieces them together in a sort of symptomatology in order to make a diagnosis. The effect is sometimes striking, occasionally even convincing, but too often highly absurd. In other words, Nordau attempts to write a critique in the likeness of a monograph on insanity; he borrows the terms of psychiatry for the delineation of the literary characteristics of contemporary poets; he builds up a symptomatology in verse, a prognosis on quotations, and a therapeutics of denunciation. He does all this without seeing a patient, but only by reading his books; and then he seriously (but we suspect with his tongue in his cheek) dedicates his book to Lombroso and launches it upon the world. It does not seem to have occurred to him that he was simply following the method of Zola (whom he abhors), who claims that he consults the scientists in the preparation of his fictions.

The more conspicuous degenerates, whose cases are reported by Nordau, are Ruskin, Rossetti, Swinburne, Verlaine, Walt Whitman, Wagner, Tolstoi, and Zola—not to speak of one Nietzsche, whom nobody in this country knows, or is likely ever to know, much about, and who seems, from extracts supplied by Nordau, to have been a real lunatic. We by no means concede that all of these men are to be considered as abnormal. In fact, some of them are far above the average man; but taking Nordau's idea, the underlying defect of these "perverts," as nearly as we can put it in a single phrase for such diverse individualities, is that in one or more ways they represent the nineteenth century's disregard for and departure from all or many of the fixed rules and true standards which the history of mankind has established after infinite pains and progressive evolution as the normal types in art, literature, and philosophy. They are *atypical*. They have come, all of them, hailing the dawn of a new era; they affect to represent not a renaissance, but a new creation. They aim to bring forth new forms, because, as they claim, the old classic forms are dead. As a consequence we have the moonshine of Rossetti and the Preraphaelites, the verbiage of Swinburne, the rhetoric of John Ruskin, the grotesque lines of Whitman, the unceasing din of Wagner, the theosophy of Tolstoi, and "ibsenities" from Scandinavia, and obscenities from Paris. These, and their hosts of imitators, plagiarists, and claqueurs, fill the world with their noise, and constitute the culture of the end of the nineteenth century. They are all that we have—except the newspapers and the magazines, and the commonplaces of Mr. Howells!

This is all bad enough, but we do not see in it (except, perhaps, here and there in the utterances of some poor fool like Maeterlinck, who is by some chance still out of the asylum) the symptoms of the madness, and hysteria, and degeneracy of the whole generation. We do not believe, for that matter, in the madness of a whole generation. It requires a graduate of the school of Lombroso to see *that*. Science or history has never demonstrated such an instance yet in any period. We do not confuse literary deterioration with somatic alterations in the brain-cells. We adjudge, moreover, that it is an anomaly for a critic to mistake himself for an alienist when he analyzes a verse or annihilates a novel. Insanity is one thing; bad letters is another. Insanity can be measured by statistics; poor literature only with a yardstick. The poet, whose eye rolled in a fine frenzy, was not, we assure Nordau, ready to be certified.

Hence, we assume that Nordau has not yet attained that mastery of himself that would make him either a sound scientist or a safe critic. He has confused two fields of intellectual activity—*i. e.*, psychiatry and criticism—which have but little in

common and which are not subject to the same methods of treatment. Therefore, he has himself departed from a normal type. In this he displays, as we have already intimated, the tendency of the extreme school of Lombroso. This school aims to establish upon scientific foundations the recognition of the *abnormal* man. It has, heretofore, confined itself mainly to the fields of criminology and psychiatry. It has remained for Nordau to attempt to carry its methods into the field of literary criticism. We doubt whether this attempt will gain permanent recognition.

We have, nevertheless, found much in Nordau that has impressed us deeply. He is better as a critic than as an alienist, and we wish sincerely that he had confined the exercise of his pre-eminent genius to the field in which it is fitted for its best endeavors, and had not made his incursions so boldly, even recklessly, into that of mental therapeutics. He recognizes more accurately than any observer with whom we are acquainted some of the radical defects in the spurious culture of the present day. This is an aberrant time and generation; wandering not so much from the technical standard of mental health as from the typical forms in art and letters, without which we believe there is no health in them. The old classic types are not lightly to be ignored. As Nature has laid down her archetypes (for instance, the vertebrate skeleton), which she modifies in countless ways but never abandons, so the unconscious energies and instinctive wisdom of mankind, in their laborious development, have evolved the invaluable archetypes of art and literature. To depart from them in the one case as in the other is not an evidence of health or originality, but is simply a departure from the norm. This fundamental truth, which underlies all true criticism, is, after all, the keynote to Nordau's book. If he had not attempted to demonstrate the forced analogies between literary deterioration and mental degeneration, we think that he would have produced a more symmetrical work. But in that case his work would not have been a true product of the close of the nineteenth century—because Nordau's book itself, as we have said, is somewhat *fin de siècle*.

INACCURACY IN SCIENTIFIC TERMS.

THE July number of the *American Journal of Pharmacy* contains some strictures upon the carelessness with which medical writers use chemic terms, and the ignorance displayed concerning even the simpler data of chemistry. The criticism relates especially to a paper on "Calomel," read at the last meeting of the American Medical Association, and is justified not only by the quotations from the paper, but also by the ordinary course of medical literature. Much of this carelessness or ignorance arises from the indifference that medical students are disposed to show toward theoretic instruction, but much also arises from the great complexity of chemistry and its rapid expansion, so that it is difficult, even for professional chemists, to maintain a comprehensive knowledge of the subject. It is, however, to editors and secretaries that we should look for the correction of such errors. We cannot expect the mass of the medical profession to be experts in the use of the terminology of chemistry, physics, or biology, but medical journals and societies that pretend to exercise literary authority should regard supervision of the scientific terms as of equal importance with the supervision of the grammar. There is no more justification for the term "oxid of calomel"—which occurs in the report of the discussion of the paper in question—than for the phrase "healthy drink," which we notice in the *Journal of Pharmacy* on the page opposite to that on which the critical editorial appears.

It is just by preventing the slipshod use of words and by securing consistency in terminology that editors fulfil their highest and most important function. In conducting a scientific journal it is not expected that the editor will exercise a very strict control over the quality of contributions from the point of view of their literary style or probable popularity, as would be done by the editor of a newspaper or magazine. Almost any issue of a medical journal will show a collection of articles of very unequal merit and moment, but contributors should be expected to conform to certain standards of spelling and nomenclature, and it is the editor's duty to see that the standards are maintained.

Some months ago a prominent medical journal discussed editorially some statistics upon the use of well-known drugs, and referred to "iodide of potash." This expression is a common error among medical men, and when a chemist ventures to criticise it the reply generally is that nomenclature in chemistry changes so frequently that it is impossible for those who are not chemists to keep up with it. It is true that some changes have been made in chemic

terms since the system was founded, but apart from those that have been additive, that is, due to the expansion of the science, very few have been made, and these have been decidedly in the direction of simplicity and precision, qualities that should recommend them to all intelligent persons. Concerning such expressions as "iodide of potash," it may be said that they have not even antiquity in their favor. It is not likely that they were ever used by chemists. In the early part of this century—in Chemistry's "hot youth, when George III was king"—an erroneous view as to the nature of salts led to the use of such phrases as "hydriodate of potash," "muriate of potash," a terminology that survives, in permissible use, in "muriate of ammonia," but the phrase "iodide of potash" does not stand for any theory, past or present.

This question is one not merely of words or of defence of certain methods of spelling. Precision in scientific terms is the basis of precision in scientific ideas, and to this end minute accuracy in phraseology is essential. In a recent State examination the applicants were asked to describe the alkaloid "strychnia." It may be hypercritical to say that this word is obsolete, but, as a term for a substance designated by chemists by a slightly different name, the word *strychnia* was made current by the *Pharmacopeia*, but changed by the terminology of the *Pharmacopeia* of 1880 to *strychnina*, and careful writers will either use the strict chemic term *strychnin* or the approved pharmaceutic term *strychnina*. Similarly, another question asked at the same examination was, "How would you test for arsenic?" There may be some doubt as to what is here meant by arsenic. The term applies to both the free element and to one of its oxids, and the preferable test for one is not the preferable test for the other. Moreover, assuming, as is probable, that the common oxid is meant, the question may arise under what conditions is the test to be made? The recognition of this body in a sample of vermin-poison, for instance, would require a different method than would be used in detecting the same body in vomited matter or in the stomach.

EDITORIAL COMMENTS.

Vital Statistics.—The death-rate of Denver, Colorado, for the twelve months ending June 30, 1895, according to the report of the Denver City Bureau of Health, was 11.52 per 1000. This is a very low mortality, and, as the population on which the rate has been computed has been estimated from the Census of 1890, it is questionable if the figures are accurate.

The population of Denver in 1890 was 106,713. It is estimated for 1894 at 145,000, an increase in four years of 45 per cent. Chicago reckons its increase in the past four years at 55 per cent., while New York considers 22 per cent. a proper estimate, and Philadelphia is satisfied with 11 per cent. According to the estimated population Chicago has a death-rate of 15.24, the lowest of any city in the world with a population over 200,000.

The census of the United States and the police census are seldom accurate, and it does not require much change in the popuatlon to effect a decided change in the rate of deaths per 1000. In small towns the registry of births and deaths is usually faulty, and when Chicago annexed many of the surrounding suburbs it did not take into account the lax registration, while it did compute its death-rate on the total population.

The New England States have endeavored to establish a uniform system of vital statistics, and the secretaries of the Boards of Health of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut held a meeting last September at which it was decided to publish a summary of the vital statistics of these States. The first one (for the year 1892) has just been issued, and, while it is incomplete in many respects, it is the beginning of what we hope will be an international system of vital statistics. Only then will an accurate annual statement concerning the population, deaths, and births of the principal countries of the world be possible and forthcoming.

The New England summary will be published only every five years, and, unfortunately, will consider the statistics of a year, antedating the report three years. The summary contains numerous interesting features. We find that the number of births per thousand exceeds the number of deaths by five, whereas in European countries, with the exception of France and Ireland, 10 and 11 per 1000 is the average excess of births over deaths. These results, however, cannot be viewed too critically, as in many countries, and especially in America, the births are not registered with as great accuracy as the deaths.

In England the parish registry and in Germany the strict police census make the returns of births more certain and more reliable, but in our own large cities, and in the smaller towns where no health-boards exist, the number of births registered falls largely short of the actual number of children born. The death-rate for 1892 in the New England States was 19.9 per cent.; 19.71 per cent. of the deaths occurred in children under one year of age, while 1.35 per cent. were in persons between ninety and one-hundred years of age. Pulmonary tuberculosis caused 10 per cent. of the deaths, or 21.8 deaths among every 10,000 living persons. Diseases of the circulatory system caused 16.17 deaths in every 10,000 living, while pneumonia, bronchitis, and influenza combined were responsible for 16 per cent. of all the deaths, or 34.7 in every 10,000 of the population.

The data on marriages and divorces are valuable from a sociologic point of view, while the study of the statistics of cities, as compared with that of the statistics of the rural districts, is a feature not yet well investigated. If the rural towns have a death-rate of 18.72 per 1000, and

the cities one of 21.01, then every additional suburban district that a city acquires will tend to diminish its general death-rate.

Vital statistics form the basis of public hygiene. Without accurate reports we can have no idea of the influence of sanitary measures on the social health or of the results of unhygienic conditions. Although after we have the figures we may juggle with them to suit our particular theory, nevertheless the figures themselves are not to blame, and are the bricks with which we must build if we would build at all. How necessary is it, therefore, that every scientific, and even unscientific, medical man should accurately make the returns required by a city's bureau of statistics, and where no such bureau exists should see to it that one is established.

Enforcing the Law.—Our most esteemed contemporary, the *Philadelphia Polyclinic*, asks whether it is or is not worth while, if we have a Code, to compel conformity with its requirements upon the part of those who need such compulsion? The question answers itself; of course it is "worth while," and it should be done, but how is the compulsion to be brought about? If our friend will tell us how it is to be done, we shall gladly cry, Bravo and amen! The machinery does not exist—or, if you will, the machinery exists, but there is no steam in the boiler. Censors do not act; it is impossible to incense them. Bring to their notice the most flagrant violation of the Code (the organic law of the Society) on the part of one of their members, and you are advised that you would "better not raise a fuss." In democracies how can a law be executed that the majority of the subjects do not wish executed? Surely there are no worse code-smashers than some of the highest executive officers of some large medical societies having the Code as their accepted law. Therefore it strikes us that we *did* answer "the main point of the objection" made by our correspondent in our issue of July 20th.

Suppose "penalties are attached," who is to execute the penalties? Penalties are at present attached—the only possible one that is desired or desirable—the penalty of expulsion of the violator from societary membership. But whoever heard of the expulsion of any one of the thousand code-smashers and law-breakers that infest and even officer many medical societies? A few expulsions on the part of every society in the land would at once make a revolution in professional opinion and practice exactly like that effected by the police-commissioners of New York City. But to put this steam in the boiler, thus to give vitality and force to the dead laws, constitutions, and rules of medical societies, their members and censors and officers must desire and resolve to execute the laws. At present they give no evidence that they so desire and so resolve. Ever and again down comes the question to one of personality. These men must be differently minded men. All reform, all progress begins and ends in individual character, in ideas and sentiments of personal dignity and honor, in the silent resolve to do one's own duty, to be true, and so far as possible to realize in daily life these ideals and sentiments. No one can doubt that such legacies of preceding generations, as codes, Bibles, laws, customs, and institutions—the concrete incarnations and products of human experience—are of great value in shaping present conduct and present growth. But we are all democrats and the animus of democracy—of much democracy—is to fling to the dogs the crystallized experience of the past, and to relearn it by other experience. And that is the weakness of the democratic idea.

It is characteristic of the upstart impertinence of conceited jackanapes to think they are wiser than their fathers or than all their fathers combined, and with headstrong folly to deny the validity of past experience. Perhaps they will one of these days come back from their codelessness, breedinglessness, godlessness, and "riotous living," in a very meek attitude of mind, having learned that their ancestors were not such fools as the descendants have just proved themselves to be. But as to penalty, the only one is exclusion from societies, and at present it seems that this cannot be effected. A man will hardly vote to exclude himself—a man cannot banish his own shadow. About all we can for the time expect is that we may keep the law standing (it is, even dead, an instigator of the tribute of the hyprocrisy that vice pays to virtue), and one day the anarchists who agreed to smash codes and remake the universe will learn that among themselves and for their own self-protection they have to re-enact the identical laws they smashed in starting their madcap civilization. In the meantime, whether to prevent the abrogation of the Code or to carry out its provisions energetically will depend solely upon the personal character of individual members of the profession and of individual societies. To form right character is the work of each and all of us and of an indefinite future.

Antivivisection for Children.—It strikes us that of all men physicians should be foremost and most emphatic in their denunciation of vivisection in the public schools or in any schools except those for adults and those especially devoting themselves to medical or biologic science. The matter would hardly seem to need argumentation. Every right-minded person must know, and doubtless must painfully remember in his own case, how callous children are to suffering and even how verily diabolic they often are as tormentors of animals over which they have power. It would also seem perfectly plain that the practice of vivisection before or by such highly imitative beings would have one certain effect: to increase enormously the already thoughtlessly or consciously cruel tendencies of their natures. "Appetite grows by eating." In medieval times the great gala days were the days of *auto da fé*. Gay cavaliers and gay ladies flirted and laughed for hours before men slowly being burned to death. They were no more intentionally or really cruel than boys to-day who pour coal-oil over dogs and burn them to death.

Would vivisection in public schools have other effects more than compensatory for the evil? Clearly and decidedly not. In the first place, dissection and anatomy and the advanced physiology to be gained by vivisection are not fit studies for the child-mind, but are plainly adapted and adaptable only to a maturer age, and for those preparing to become physicians or specialists. The child-mind is not by its very nature analytic, and any attempt to force it into analytic studies before a riper season is squarely contrary to pedagogic science. It is not only against the child's nature and bound to prove unsuccessful, but, if possible, it would not be desirable. We need to teach the young mind the beauty of life, not

the analysis of death. In educational methods we are at last fairly emerging from the barbarism of the study of dead things by dead methods and by dead-alive teachers. Do not let us encourage any such reversion to the barbarism of medievalism, as turning the kindergarten, that divine promise of a future civilization, into a miniature dissection-room or laboratory for experimental physiology. Moreover, in the interests of physiology, of medicine, and of science itself, we should protest against such physiology as would be taught in the public schools by the present-day (or promised) public school-teacher. *Gott bewahr!*

We said that physicians should be particularly enthusiastic in opposing the practice of vivisection-experiments before children. And why? First, because physicians generally are the kindest-hearted of men; the great body of the profession detest the excesses of the vivisection-mania that have at times, and sometimes justly, been charged to medical science. The great body of the profession are by no means anti-antivivisectionists, and are little inclined to clap the capers of such extremists, because these do harm to the nobler cause of scientific vivisection for laudable purposes by laudable methods—a cause that every genuinely scientific man has at heart. And precisely because he has this cause at heart, he is not minded to kick up a fuss with a lot of foolish old women and reverend sentimentalists every time a cat jumps over a wall. One who is really interested in science does not try to arouse antipathy to the profession of medicine by vivisection-somersaults in the market-place. He attempts to teach kindly even the worst sentimentalists, and to instruct them patiently in the ways and purposes of true science. We have already had entirely too much cantankerous opposition, extremism, and prejudice aroused in the popular mind against us and against vivisection by some of our equally silly extremism.

The Nurse, the Nostrum-advertiser, and the Puzzle-bribe.—We have long wondered why it was that the sympathy of the nurse had not been exploited by the lynx-eyed professional advertiser. Surely her experience with the sick should have made her an expert judge of the value and physiologic action of drugs, and her testimonials should alternate in all circulars hereafter with those of the gullible D.D.'s and the purchasable M.D.'s. Perhaps the nurses during the long "night-watches," viewing the worthlessness of the treatment of the regular physician, might by the glowing puffs and testimonials be prevailed upon to give the dying patient antisicknia or contramorbin, and thus save his life, much to the glory of the scientific layman too "broad-minded" to divulge his precious secret. At last one of the broad-gauged gentlemen has struck the vein, the geologic one, the gold-stratum, and sends his circular to all the nurses. It begins thus:

"In your vocation as nurse you, no doubt, often are in want of some little thing to entertain either yourself or your patient. At times it is difficult to keep awake without something to engage one's thoughts, especially during the night-watches. We have obtained several puzzles that have proved useful in entertaining people at social gatherings and at odd moments. We believe that you could make good use of them in the homes you visit.

"We shall be pleased to send you two of our best puzzles if you will kindly acknowledge having received the trial box of ——— we have mailed to you and will try the remedy, in case you are subject to headache, or give it to some one who will try it. One of the puzzles referred to is almost infinite in its possible combinations, and does not lose its interest after having been solved one way.

"The merits of ——— have been acknowledged by scores of physicians. One of them recently said that he used ——— with great benefit in the treatment of a lady who could not take one of the safest coal-tar products because it depressed the action of the heart. ——— afforded the desired relief without causing any depression. In view of your calling and probable familiarity with the remedies of this class, we believe you will appreciate and esteem ———."

The U. S. Marine-hospital Service.—The report of the Supervising Surgeon-General of the Marine-hospital Service of the United States for the year ending June 30, 1893, in two volumes, recently issued, contains some interesting statistics relating to the diseases that affect the seamen under the charge of the department. The service is divided into geographic districts. There were treated in hospitals under the supervision of the medical officers 14,857 patients. Among these there were 487 deaths (3.21 per cent.). The average number of days' relief given each patient was 26.5. There were treated in the dispensary and office 38,460 cases

As bearing upon the frequency of gonorrhea among this and similar classes, it appears that of 53,317 patients who applied for medical relief 4600 were affected with gonorrhea, 9 per cent. of the whole number. Forty-two-hundred-and-sixty-seven had secondary syphilis and 1805 were treated for ulcer of the penis. Only 250 of the patients were treated for valvular disease of the heart.

Of the 3070 applicants for admission into the marine service as seamen, pilots, and officers, 121 were rejected for physical disability. There were 43 rejections for color-blindness; only 7 for valvular disease of the heart; 4 for pulmonary tuberculosis; and 23 for genito-urinary troubles; gonorrhea causing 4 rejections and ulcer of the penis 8.

The frequent presence of venereal disease among sailors has always been recognized, but that so large a percentage should be afflicted would seem to demand some measures of prevention or suppression. If gonorrhea in the applicant is sufficient cause for rejection, it would seem that repeated attacks of this disease might warrant expulsion from the service.

The evil effects of gonorrhea and its transmissibility should serve to bring about some restrictive laws, and punishment of the affected individual would probably do more good than the licensing of prostitution with its supposed hygienic regulations.

Of 35 candidates who presented themselves for examination for admission into the medical corps, only 3 received the required grade-mark of 80 per cent.

Sunlight as a Germicide.—That certain members of the human species "love darkness rather than light" has long been well known, but that this same preference extended into the plant-world is a more recent discovery. The saprophytic and parasitic bacteria cannot bear sunlight. Like all other evil-doers, they are sneaks and cowards. Even such a ferocious and merciless cut-

throat as the *Bacillus anthracis*, who can invade almost any organic tissue, cannot manage to flourish in the sunlight. Some recent experiments of Marshall Ward's have shown this very prettily. A pure culture of the bacillus was grown upon a plate of glass to which sunlight was admitted through the openings of a stencil-letter, and after twenty-four hours of incubation the shape of the letter was clearly outlined upon the plate. Upon the parts to which the light had access, all growth was stopped, except that after several days' incubation a few feeble colonies appeared scattered over the illuminated area. The light was then decomposed and other experiments tried, which resulted in showing that the red, orange, yellow, and true-green rays exerted very little bactericidal effect, which was produced almost entirely by the blue and blue-violet rays. This revelation will, no doubt, delight our "blue-glass" friends. The same effect has been known for some time to be produced upon other pathogenic germs, notably the typhoid and Klebs-Loeffler bacilli, by sunlight. Indeed, it has been suggested that these organisms might be attenuated for inoculation-purposes by longer or shorter exposures. All of this simply confirms the oft-enunciated conviction that sunshine is "the one thing needful," the true "greatest thing in the world." We should insist that every living-room be sunlit, and "*Licht, mehr Licht*," physical as well as mental, should be our constant cry.

The Index Medicus.—There seems reason to hope that the *Index Medicus* will be revived, but whether it will or not will depend upon the response of the medical profession in the present emergency. In a letter to the Resident Librarian of the Royal Medical and Chirurgical Society of London, on the subject of the publication of the *Index*, Dr. John S. Billings states that "the cost of producing the work is about $4800 per annum, but as the amount of medical literature is increasing it is safest to put it at $5000. It is proposed to try to get 200 subscriptions at $25 each." It is estimated that 120 subscriptions can be obtained in the United States; sixty in Great Britain, and twenty in France and Germany. "Only 202 copies will be printed, no exchanges will be made, and there will be no advertisements. The subscriptions are to be paid in advance for one year to either of the undersigned (Dr. John S. Billings and Dr. Robert Fletcher). When 200 subscriptions have been received the list will close and the work will commence. It is thought that the first number may appear in November. If by December 1st the 200 subscriptions have not been obtained, the money then received will be returned to the subscribers, and the attempt will be abandoned." Surely, there should be no difficulty in putting into effect this proposition. Having been made to realize what the loss of the *Index* to scientific medicine would mean the response should be immediate and unequivocal.

Dr. Roberts Bartholow.—As there have appeared recently in several journals utterly unfounded references to the ill-health of this distinguished clinician and therapeutist, we take occasion to repeat the statement already made in these columns that Dr. Bartholow is in excellent health and is engaged in his professional duties with his accustomed zeal and vigor.

CORRESPONDENCE.

LONDON LETTER.

The Registration of Midwives—Honors for the Medical Profession—The Queen and Her Resident Physicians—The Death of Huxley—The Late D. Wilhelm Meyer—The Testimonial to W. G. Grace—Scientific Progress.

THE question that excites most interest in the medical profession here at present is the proposed registration of midwives. A bill making such registration compulsory has recently been exercising the august intellects of hereditary legislators in the House of Lords, and seemed in a fair way to become a law, when the killing frost of the dissolution nipped its root. As things now are any woman can call herself a midwife in this country and play the part of Lucina among her sisters in their hour of travail without any guarantee that she knows more of the obstetric art than "My Uncle Toby." The results of this state of things among the poor may easily be imagined. To say nothing of frightful injuries caused by their active or passive ignorance, the dirty and often drunken women who act as midwives are always likely instruments for the distribution of puerperal sepsis. Darker things, such as abortion-mongering and child-murder, are hinted at. That such things are done is certain, but our midwives as a class, fortunately, have too little knowledge for the safe practice of crime. The fact that the English law does not require that still-births should be registered, however, makes it easy for unscrupulous persons to assist Nature in the elimination of superfluous infants.

The London Obstetrical Society has for years striven to the best of its power to remedy the evils that have been referred to by holding examinations of women wishing to act as midwives and granting certificates to those coming up to the required standard of knowledge. The movement for the registration of midwives, which is intended to be a further step in the direction of securing poor women against incompetent midwives, has the active support of the President of the Obstetrical Society, Dr. Champneys, of Sir John Williams, a past President and the leader of the obstetric branch of the medical profession in this country, and of the majority of English obstetricians. There is considerable opposition to it, however, in the body of the profession, as is proved by the fact that many branches of the British Medical Association have passed resolutions strongly disapproving of the proposed measure. It would perhaps be unjust to say that this opposition is prompted solely by sordid motives, but it is impossible to deny that the feeling of the profession in the matter has been fanned from one of "benevolent neutrality" to more or less active hostility by the persevering denunciations of a band of agitators (in which the Hibernian element is conspicuous), who make no secret of their determination to put every obstacle in the way of the betterment of midwives, which they profess to regard as the creation of a new order of qualified medical practitioners. To speak plainly, they are afraid of the competition of these women, and their objections to the registration of midwives resolve themselves into the *argumentum ad crumenam*. This attitude on the part of a profession, which is nothing if not philanthropic, is the reverse of edifying.

It is some comfort to those among us who have the dignity of their calling at heart that the General Medical Council, which not long ago allowed itself to be misled by the clamor of a small but noisy faction into condemning the certificates issued to midwives by the London Obstetrical Society, has now (though somewhat grudgingly) approved of the principle of the bill. For the present, of course, the registration of midwives is not, in Gladstone's phrase, "within the sphere of practical politics," and the new government will for a time have its hands full of matters more important from a political point of view. The omens are, however, more favorable to the passing of such a measure than they were when the star of Lord Rosebery was in the ascendant. The Tories have not so many faddists in their ranks as the Liberals, and in matters concerning public health they have much more legislative backbone than their rivals.

When a government goes out in this country it throws a handful of titles and decorations among its supporters, as a parting guest "tips" the servants of the house he is leaving. The medical profession, which as a body has little or no political influence, does not usually come in for recognition on these occasions, but this time the "honor of Knighthood" has been conferred on two Dublin doctors, henceforth to be known as Sir Thornley Stoker and Sir Christopher Nixon. The distinction—such as it is—is no doubt intended as a sop to the political party (Home Rule) to which they belong, but both are of a professional standing that makes such an acknowledgment acceptable to their brethren. Sir Thornley Stoker is President of the Irish College of Surgeons, and is a brother of Mr. Bram Stoker, the *fidus Achates* of Henry Irving, and (if rumors lie not) the inspirer of that hirsute histrion's after-dinner eloquence and academic prolusions. Sir Christopher Nixon is equally eminent in the Irish Capital as a physician and as an amphitryon; in the words of an admiring compatriot, he is "a noice mahn and a noice-mannered mahn."

In connection with this subject of honors it may be mentioned that the Queen has "of her own mere motion" (as the royal style runs) made her resident physician, Dr. James Reid, a Knight Commander of the Most Honorable Order of the Bath. This may not sound a very exalted dignity to republican ears, but connoisseurs in such toys estimate the value of a decoration as bibliomaniacs do that of an old chap-book—by its rarity. From this point of view the cabalistic letters "K.C.B." appended to the name of a physician must be accounted very precious, for there are only four other members of the medical profession on the roll, viz.: Sir Henry Acland, Sir Rutherford Alcock, Sir William Flower, and Sir John Kirk. In none of these cases, however, has the honor been bestowed for purely professional distinction. Sir Henry Acland was for many years Regius Professor of Medicine in the University of Oxford, and took a prominent part in establishing the splendid museum of that ancient seat of learning. He is a type of the old stately race of academic dons, and a man of varied erudition, who is said by his friends to add some knowledge of medicine to his many intellectual accomplishments. Sir William Flower was for many years surgeon to the Middlesex Hospital, but it is as Director of the Natural History Museum that his title was given him. Sir Rutherford Alcock is one of the oldest members of the Royal College of Surgeons of England, but it was in the diplomatic service that he won his K.C.B. Sir John Kirk got his, not for medical work, but for his services as British Consul-General of Zanzibar.

One member of the medical profession, Sir William Jenner, holds the coveted distinction of Grand Cross of the Bath—that is to say, he is in the first class of that highly rarefied order among serene transparencies and other ethereal beings, but he is a man whom the Queen greatly delights to honor. Sir James Reid, who is forty-six years of age, is a Scotchman, a race that finds especial favor in her majesty's eyes. He was appointed to his present post in 1881, largely owing to the influence of the late John Brown, the Queen's highly privileged "gillie." He accompanies the Queen whereever she goes, and is always with the Court except for a fortnight in the spring and a week or two in the autumn, when he is allowed a brief holiday. Sir William Jenner, though he has retired from active practice, still exercises a general supervision over the Queen's health, and visits her once a fortnight when she is at Windsor or Balmoral.

Sir James Reid receives a very moderate salary, but he has a residence both in Buckingham Palace and at Windsor, and as matrimony is not among the privileges allowed him his expenses cannot be great. With all its apparent dignity, the position is not far removed from that of an upper servant, and the want of the ordinary stimuli to exertion must tend to make whatever stock of scientific knowledge one started with run to seed.

Sir James Reid's predecessor, Dr. Marshall, fell into a pitiable state of gibbering melancholia before he died, in consequence, it was believed, of the monotony and isolation, intellectual as well as social, of his life. He continued at his post for many years before it occurred to the Queen that he might possibly need a holiday. When the poor man did at last get his royal mistress' gracious consent to a brief respite from court-attendance, he was summoned back in a week or two because John Brown was indisposed. That autocrat of the backstairs would not trust his precious person in the hands of the late Dr. Wilson Fox, one of the first physicians of England, who, though intrusted by Sir William Jenner with the care of the sovereign's health, was not thought good enough for himself by her flunky. Dr. Marshall received a salary of £400 a year, and when after some fourteen years' faithful service it was raised to £500, he was given to understand that he should consider himself treated with especial liberality. When it was necessary to find a successor there were many candidates for the post, but when Sir William Jenner—of whom his worst enemy cannot say that he uses language to conceal his thought—had told them the plain, unvarnished truth about the appointment, how it was little better than living in a gilded prison; how the movements and actions of the unfortunate physician were hedged about with all sorts of vexatious restrictions; how he could go out of doors only when "Her Most Gracious" had gone for her daily drive; how his only society was gentlemen-in-waiting and maids of honor, fashionable fribbles and feeblings, whose minds were etiolated by the blighting air of a court, and who looked down upon him as an inferior; their vaulting ambition sought for something less prickly

than a crown to exercise itself upon. One man who was induced to make a trial of the post resigned it after three months, and, when he was asked to stay, is reported to have replied that he would not do so for £10,000 a year. It should, however, be stated that Sir James Reid is in a different position from his predecessor, for he has the care of the earthly tenement of the Queen herself, as well as that of the commoner clay of her household. It is whispered that until lately she has not been an easy patient to manage, having been all her life given to defying the elements, to the grievous discomfort and not infrequently to the bodily detriment of her attendants. At last, however, she is beginning to feel that cruel age hath clawed her in his clutch, and this makes her more docile to the advice of her physicians.

In Huxley the medical profession in this country has lost the man of whom it had most reason to be proud. One of those who stood by his bedside throughout his long illness has told me that the philosopher was greater in his death even than in his books, adding with the emphasis of heartfelt conviction: "He was a grand man." It was characteristic of him that he joked with his physicians and with those about him to the very last. On one occasion when a medical oracle from London was rather aggressively jocose, Huxley said afterward that he had felt bound to respond, but that the effort had been too much for him. This little story has a moral for those physicians who think the sick-room is a place for the display of cheap wit; what is fun to them may be death to the patient. In his younger days Huxley was an assistant surgeon in the Royal Navy; a position which corresponded to that of surgeon's mate, as described by Smollett, was obtained after an examination somewhat on the lines of that passed by Roderick Random. Huxley was not qualified in the technical sense till years after he had left the Navy. He became M.R.C.S. in 1862, probably as a necessary preliminary to his being appointed Hunterian Professor of Comparative Anatomy. Afterward he was elected to the Fellowship. As bearing on the question of professional titles it may interest American readers to know that on Huxley being asked by a correspondent what was the correct manner of addressing him, replied that his visiting cards had never borne any other designation than "Mr. T. H. Huxley;" he added, however, that he did not particularly object to be styled "Professor," but he could not stand "Doctor." Yet he might have used the latter prefix with perfect propriety in the later years of his life, for besides his degrees of LL.D. and D.C.L. from Edinburgh, Oxford, and Cambridge, he was honorary M.D. of Würzburg. He died, as he had lived, an agnostic (to give him the denomination which he himself invented to describe his own mental attitude), but in obedience, it is said, to a wish expressed on his deathbed he was buried with the rites of the Church of England, beside a son who died in childhood.

Dr. Hans Wilhelm Meyer, of Copenhagen, who recently died of typhoid fever in that sink of unsanitary iniquity, Venice, was one of the few enlargers of the empire of medicine who have seen their discovery accepted as part of established scientific truth in their lifetime. Yet it is little more than twenty-five years ago since he described adenoid vegetations of the nasopharynx, and it was a considerable time before the affection came to be recognized by the profession in this country. Ten or twelve years ago the leading physician in London stated in my hearing that he had never heard of it, and even among specialists a knowledge of the existence of such growths was by no means common property at that time. A well-known otologist who was present at an operation for adenoid vegetations maintained in the most positive manner that the tissue removed was nothing but mucous membrane, and pretty plainly hinted that the whole business was a fraud. Another leading otologist, after vehemently denying their existence for years, suddenly found salvation in a somewhat mysterious manner. His conversion was as complete and almost as rapid as that of St. Paul, for after sitting at the feet of a laryngologic Gamaliel for a very short time, he came forward as an apostle of his new faith, which he preached with all the zeal of a discoverer. Both these men were among the elect, as regards rank and file of the profession; of the men who have been in practice over fifteen years, probably a very large proportion would be found who if they have ever heard of adenoid vegetations at all believe that they are mere products of what Tyndall called "the scientific use of the imagination" by specialists. Meyer had the appearance of a dissenting minister from a rural district, and Morell Mackenzie, who was very proud of his own manipulative dexterity, said after meeting him that one could see he was not an operator. Whether he was an operator or not, Meyer has been the means of brightening innumerable lives that would otherwise have been dark and useless.

Probably in no country but England would it occur to anyone to get up a subscription for a healthy adult male because he could strike a leather ball with a piece of wood oftener than most other people. The so-called "national testimonial" to W. G. Grace is a striking proof of the amazing gravity with which Englishmen treat cricket. Grace is better known to his countrymen than any statesman or soldier, artist or author, preacher or teacher that England can boast of; in popularity he surpasses even Gladstone, whose skill in tongue-fence is akin to Grace's deftness with the bat. So great a hero in British eyes is the champion cricketer that the medical profession is proud to claim him as a member; the *Lancet* pretends to believe that his medical training has something to do with his athletic prowess, and the *British Medical Journal* has started a subscription-list of its own for him. Meanwhile many a deserving member of the profession may starve. *Quantum est in rebus inane!* As Grace plays cricket all the summer, and is largely engaged in other forms of sport during the winter, one wonders when he finds time to attend to his medical practice. He had a preternaturally long career as a student at St. Bartholomew's Hospital, and it used to be a stock joke among the examiners at the College of Surgeons when he had come to grief for the *nth* time to say: "Bowled again, Mr. Grace." It would have been more in accordance with the fitness of things if he had been a vet. instead of a doctor, for he has made a living much more out of "balls" than out of "pills."

In the way of additions to the sum of knowledge in medicine there is nothing of importance to chronicle. In his researches on immunization against snake-poison, which were introduced to the world with a flourish of journalistic trumpets, Professor Fraser, of Edin-

burgh, has trodden in the footsteps of Dr. Calmette, a well-known pupil of Pasteur's, who, after doing much to spread the light of science in the far East (he was head of a bacteriologic institute at Saigon, Cochin-China), is now director of the Pasteur Institute at Lille, France. Of progress in other directions there is for the moment no sign, but our workers are following Grant's advice and "pegging away." As regards the diphtheria-antitoxin in particular, the only thing resembling an official deliverance on the subject is a statement reported to have been made by Sir J. Russell Reynolds, President of the Royal College of Physicians of London, and also of the British Medical Association, to an enterprising reviewer, that if his wife or child had diphtheria he would use the remedy. But we are still waiting for the report of the Metropolitan Asylums Board on the results obtained in the hospitals under their management.

SOCIETY PROCEEDINGS.

BRITISH MEDICAL ASSOCIATION.

Sixty-third Annual Meeting, held at London, July 30 and 31, August 1 and 2, 1895.

(Continued from page 167.)

SECOND DAY—JULY 31ST.

SIR WILLIAM BROADBENT delivered the Address in Medicine. His subject was

THE GROWTH OF THE ART AND SCIENCE OF MEDICINE.

The words "art" and "science" were used in this order advisedly, for the art of healing is one of the primary needs of social organization, however rudimentary, and preceded by many ages the development of anything that could be called a science of medicine. So far, moreover, the art of healing has always been in advance of science, firmer in its basis and more secure in its principles, and, even when medicine as a science has realized our highest aspirations, the end and aim will be art—that is, skill in the recognition and treatment of disease. At the same time it is true that until science began to throw light on its path the art of healing struggled blindly on its way, and its advances were intermittent and slow, with long intervals in which there were stagnation and retrogression. All true progress in medicine has consisted in the application of the results of scientific investigation to the facts of observation.

At whatever period of the world's history and at whatever stage of civilization we may contemplate the physician engaged in combating disease, there will be recognizable three distinct factors in his work—his power of identifying disease, the remedies at his command, and the ideas by which he is guided in the employment of these remedies.

The first rough and imperfect identification of the more conspicuous forms of disease was scarcely worthy of the name of diagnosis. Anatomy, which is essential to the localization of morbid conditions, was scarcely known; no shadow of comprehension of physiologic or pathologic processes entered into the conception—it was simply the attaching of a name to an assemblage of symptoms, the course of which, however, was watched with great sagacity.

How remedies were first discovered and how the properties and uses of so many of them as were handed down from remote antiquity were known is matter for amazement. Animals are credited with instincts that direct them to the consumption of certain herbs or mineral substances when their health is deranged; the instincts of primitive man also must have applied to remedies as well as to food, and experience of their effects must have been accumulated and transmitted, embodied frequently in legend or superstition, as part of tribal knowledge.

Of the infancy of medicine, properly speaking, we know nothing. Individual acts of healing are related in the Old Testament, and the treatment of wounds is described by Homer; the Chinese from remote antiquity had a system of medicine, and medicine has a place in the *Vedas;* but in the works of Hippocrates, the earliest medical literature that has come down to us, we are at once introduced to the theory and practice of the art of healing at a considerably advanced stage of development. Already there were rival schools of thought and treatment, and disease was discussed with extraordinary acumen from opposite points of view both as regarded its nature and phenomena.

Bleeding was in every-day use, not by any means as a routine fashion, but with judgment; cupping also was practised. The virtues of opium were known, and purgatives of various kinds, chiefly irritating and violent, and emetics were familiar remedies; enemata and suppositories and pessaries were employed, and fomentations and poultices in great variety were applied.

Hippocrates, whose writings embody all our knowledge of ancient medicine, was born about 460 B.C. He was a contemporary of Socrates, Euripides, and Aristophanes, and was a worthy representative of medicine at that brilliant period of Greek literature and intellect called the age of Pericles.

It is true that his knowledge of anatomy was rudimentary, and that his physiologic ideas were totally wrong, but he has left of himself the picture of a sagacious observer and wise physician. He was the inheritor of the knowledge and traditions of the school of Cos, and another source of information by which he had profited was the training-establishments of athletes, where the influence of diet, gymnastics, and baths on health and vigor was carefully watched. His attitude of mind was toward the study of disease as such, rather than the differentiation of distinct diseases. Refinement in this latter direction had obviously been carried much too far by the school of Cnidos, which he criticised and opposed, where symptoms were looked upon as separate morbid entities.

His distinguishing merit, however, was that he was guided by observation and not by theory. Hippocrates could not, any more than his contemporaries or successors, or than we ourselves, escape the dominion of theory; but his theories were generalizations from observed facts, and not deductions from preconceived ideas or so-called first principles.

The doctrine with which his name is associated, that of the coction of humors and of critical days, for example, is essentially a generalization from the natural history of certain simple diseases. The facts were essentially facts of the natural history of disease. The theory evolved as an explanation of the course of events and

applied in the elucidation of disease of which the processes were not patent on the surface, was that some one of the four humors, the due balance of which constituted health, had obtained predominance and set up disturbance, general or local; this was concocted or elaborated by the animal heat, increased for the purpose, and qualified by admixture of other humors, and so brought into a condition in which it could be expelled and got rid of.

Hippocrates, from this subordination of theory to observation, from his careful study of the causation of disease, not less than from the lofty sentiments and clear judgments contained in his writings, remains, and must ever remain, the model physician.

During the 500 years that separated Galen from Hippocrates the center of gravity of the civilized world had shifted. Greece, shattered by conflict between its different States, had succumbed to Macedonia. Alexander had conquered Asia and then died. On the ruins of his empire Rome had gradually risen, and when Galen lived had extended her rule over Greece, Asia Minor, Egypt, and the southern littoral of the Mediterranean as well as over Gaul, Spain, and Britain. There had been time, however, for the development of a high degree of intellectual activity and literary culture under the Ptolemies in Egypt, and Alexandria had become a great center of learning. Here marked advances were made in anatomy; dissection was practised on human bodies as well as on animals. Herophilus, between 305 and 280 B.C., left his name to the confluence of the sinuses of the dura mater; Erasistratus, a contemporary, recognized in a crude way the motor and sensory functions of the nerves; Chrysermes, 240 B.C., wrote on the pulse, as did also Heraclides, 230 B.C.

Medical writings date from Alexandria as late as 170 A.D., but the school had long lost its authority, and Rome henceforth attracts the highest medical talent. The physicians who first made a name in Rome are Greeks—Asclepiades, the friend of Cicero, and Galen himself. Celsus, however, who comes between the two, writes in Latin.

Galen, who was born at Pergamos, A.D. 130, dominated medical thought for 1500 years, and if it was inevitable that authority should exercise such undisputed sway for so long a period it was perhaps fortunate that it derived from Galen. He was in spirit a follower of Hippocrates, and the basis of his ideas on disease and its treatment was observation. His keen and active intellect and fertile imagination, it is true, led him to theorize on every conceivable subject; but the impression left as to his character by reading his numerous works is that of an acute observer, of remarkable ingenuity and profound judgment, and excellent common sense.

He dissected diligently and thoroughly, but mainly monkeys rather than the human subject. Taking this into consideration, his writings on anatomy were wonderfully complete and exact. They held sway until the time of Vesalius. He finds the most ingenious reasons, often far-fetched and preposterous, for the form, consistence, and relations of all the various organs.

In respect of anatomy, his knowledge was incomparably superior to that of Hippocrates. He experimented on the spinal cord and on the nerves, and knew that they subserved motion and sensation—knew even that there were motor and sensory nerves distributed to the muscles and skin respectively, discovered the part taken by the recurrent laryngeal nerve in phonation, and, although his physiology is chiefly represented by fanciful teleologic explanations of the uses of the different parts and organs, he made noteworthy additions to the knowledge of functions.

Apparently Galen was the first to establish the fact that the kidneys secreted the urine, and that it was conveyed by the ureters to the bladder. At any rate, this was disputed in his time, the objection being that the urine could not be forced back through the ureters, and could not, therefore, have entered by these canals. The bladder was supposed to attract the urine. He demonstrated it by tying the ureters; and in the course of his experiment he almost stumbles on the discovery of the circulation, for he maintains that blood is carried by the renal arteries to the kidneys in order that its watery part may be filtered off. The traditional ideas as to the origin of the veins and of the flux and reflux of the blood in them, however, blinded him to this and other evidence, and he believed that the arteries contained air, though he maintained that they also contained blood.

A frequent reproach brought against Galen is that he spoke of the interventricular septum as perforated, so as to allow the passage of air between the two ventricles, against the evidence of his senses; but an excuse can be found for him in the fact that invisible communications had always been supposed to exist between the trachea and the arteries, by which air passed from one to the other. He can only have meant similar invisible perforations, the orifices of which he would think he saw in the depressions which the walls of the ventricles present.

Galen wrote more than a hundred treatises on various subjects, including six on the pulse, and, while giving extravagant descriptions and making fanciful comparisons, he pointed out distinctions and characters that have been verified by the sphygmograph.

His treatise on local affections is remarkably true to Nature, and no more impressive lesson on the value of observation, even when unaided by science and experiment, can be afforded than by realizing how fresh and vivid and modern his descriptions of diseases and symptoms sound. His diagnosis, for example, between hematemesis and hemoptysis and other forms and causes of blood-spitting leaves little to be desired.

Materia medica was always too multifarious, even in the earliest times, and that of Celsus and Galen was much more varied than that of Hippocrates. Theriaca, so named from containing viper's flesh, was the subject of a work by Galen. It was a complicated opiate electuary containing about 63 ingredients, among which, besides poppy-juice and the vipers, were pepper, rose-leaves, iris, licorice, cinnamon, nardus, cassia, crocus, frankincense, balsam, gum, fennel, cardamom. It is said to have been employed for 2000 years. Aloes, in Galen's hands, had largely taken the place of the irritating purgatives, such as hellebore and spurge, previously employed. Dioscorides, who wrote in the first or second century, describes more than 2000 substances, chiefly vegetable. It may be remembered that an attempt was made only last year to invalidate the patent for lanolin on the strength of a process for obtaining fatty matter from wool, given by Dioscorides.

The doctrine specially associated with the name of Galen is the humoral pathology accepted by him from Hippocrates, and developed. The humors are phlegm, blood, yellow bile, and black bile; and all diseases arise either from a change in the quality of these humors, or from a predominance of one or other of them, or a flux of some particular humor to a given part. But, like Hippocrates, Galen is first of all an observer, and his theories, faulty as they may be, are generalizations from observations, and not deductions from *a priori* assumptions as to the nature of things.

Both Hippocrates and Galen rejected the doctrine of the sect of empirics, who declared that experience alone, without reasoning as to the nature or relations of observed phenomena, and without reference to causation, or to the influence of climate, season, age, sex, character of constitution, or mode of life, was the only safe guide in the treatment of disease.

Hippocrates still more emphatically rejected the pseudo-philosophic deduction of rules of treatment from the abstract qualities, hot and cold, dry and moist, acrid and sweet; and Galen in his turn rebutted the methodic doctrine of Asclepiades and Themison, which he found prevailing in Rome, and according to which all diseases were referred to constriction and relaxation, and treatment consisted in relaxing and astringing.

A high standard of medical literature is maintained by Oribasius, the friend of Julian, from 350 to 400, by Aetius, who wrote near the end of the fifth century; Alexander, a little later in the reign of Justinian; and Paulus, who lived about 620; and improvements in practice can be traced during this period.

Alexander treated gout with purgatives, in which a kind of colchicum was a constituent. Paulus first described the aperient action of rhubarb, and extolled steel in scirrhus of the spleen.

After this there is a long gap in the history of medicine and of the liberal arts generally, but this is not to be wondered at. The Roman system of civilization was gradually broken up, and its warring fragments were shaped by geographic and racial conditions into States out of which modern Europe has grown.

The seat of Government was shifted from Rome to Constantinople in 330. Rome was sacked in 546 and 549; later the Church established its dominion over the ruins of the ancient city.

As countries and governments were organized and delivered from the pressure of constant war, universities were founded. At Salernum there were already professors of physic in the middle of the seventh century. Charlemagne founded a college here in 802, and the Schola Salernitana was dedicated to Duke Robert of Normandy, son of William the Conqueror. The Universities of Bologna and Paris almost rival in antiquity that of Salernum. Thus in these dark ages the revival of learning and the *renaissance* of art were being prepared.

Names that have remained famous began again to appear in the ninth century. The followers of Mohamed in the course of their conquests found at Alexandria the works of Hippocrates, Galen, and other early medical writers. These they translated into Arabic, and upon them was based the medical learning for which Arabian physicians became renowned. With the Moorish conquest of Spain, and the extraordinary culture and civilization developed by the invaders, the writings of Hippocrates, Galen, and the best Greek physicians, which had almost been lost sight of, came back to Europe with practical additions and modifications of great interest. Venesection was employed with greater moderation, and milder purgatives were substituted for hellebore and the like.

Rhazes, from 852 to 932 A.D., besides reproducing the most important works of Hippocrates and Galen, gave the first account of smallpox, which, like the plague and cholera, came to us from the East, where he had seen it before the Saracens brought it into Europe in the course of their invasion. His description of the disease served for 500 years, and it is perhaps worthy of remark that he compares it to a ferment in the blood, like must. He is said to have been the first to employ chemic as distinguished from Galenic remedies.

Avenzoar speaks of adherent pericardium and mediastinal abscess, and employed nutrient enemata. Albucasis appears to have been very enterprising as a surgeon. It was only at the end of the fifteenth century that, in the general revival of learning, Greek medical literature displaced the Arabian writers, and again resumed its authority.

While there is evidence that clinical medicine was seriously cultivated, such events as the visitation of the plague in 1348, which carried off one-fourth of the population of Europe, and modified profoundly social history, or the successive epidemics of the sweating-sickness, which specially affected England from 1485 to 1529, left no mark on the history of therapeutics. Syphilis, which first became prevalent and virulent in 1494, afforded better opportunities for the trial of remedies. Guaiacum obtained a reputation as a specific for this disease, which we do not now understand; but it was seen before long that mercury, which was employed in the form of inunction, was the real remedy. John of Vigo was the first to recommend mercurial inunction, but Carpus previously employed it as a secret remedy, and amassed a large fortune thereby. Fumigations were also practised. The effects were attributed to the carrying off of humor by the salivation that was produced. The introduction of mercury was an important addition to the materia medica.

Already in the fourteenth century *post-mortem* examinations and dissections of the human body were made. The imagination was stimulated and a material impulse was given to the energies and ambitions by the discovery of America in the fifteenth century, and the invention of printing in 1462 made general intellectual culture possible. An evidence of the revival of interest in medicine was that the practice of medicine, which had drifted into the hands of monks and priests, was reclaimed. Linacre in England took the licensing to practise out of the hands of the bishops, and founded the Royal College of Physicians in 1518.

The prodigious mental activity of the sixteeenth century took in medical matters the form of eager and close study of human anatomy. Vesalius challenged the accuracy of Galen, and was hauled before the Inquisition for his pains. Other names which mark this epoch and which have been left imprinted on some part of the human frame are Fabricius, Eustachius, Fallopius, Ingrassius, Colombus, Arantius, Varolius, while Servetus, Colombus, and Cæsalpinus almost penetrated the secret

of the circulation. This great discovery, however, was reserved for Harvey, and the publication of the *De Motu Cordis* in 1628 constituted the most important epoch in the history of medical, and, indeed, of biologic science. But while vindicating his undoubted claims, we must not forget that he owed his early knowledge of the anatomy of the heart and vessels to Fabricius, and drew his inspiration from the teaching he found at Padua. There is no need for me to dwell on the importance of the discovery of the circulation. When completed by the demonstration of the capillaries by Malpighi and by the discovery of the lacteals already made by Aselli in 1622, and of the receptaculum chyli and thoracic duct by Pecquet in 1647, and of the lymphatics by Steno somewhat later, the foundation was laid for physiology and the first step taken toward a real comprehension of disease.

It was a long time, however, before the establishment of the circulation began to bear fruit. Indirectly, it is true, an end was made of various absurd discussions, as, for example, whether bleeding ought to be done on the same side as a pleurisy or on the opposite side, which was the subject of a formal enunciation by the University of Salamanca to be enforced by legal penalties, and minds were emancipated from the authority that had enslaved them for so many centuries. But the first conclusions drawn from the circulation of the blood and lymph were absurd if not mischievous; one kind of blood was supposed to be conveyed to the muscles, another to glands, and the nerves were supposed to convey nutriment to white fibrous tissues, and a century after Harvey there were physicians who sat to Le Sage for the portrait of Sangrado, which he drew in *Gil Blas*, and to Molière for the character of Diafoirus.

While Sydenham, who wrote between 1666 and 1680, and Boerhaave (1668-1738), the best and most representative physicians of their respective times, fully realized the fact of the circulation of the blood, it had exercised remarkably little influence on the theoretic views that they entertained with regard to disease, or on their practice.

Sydenham may be called the English Hippocrates. He was the last and best of the pure Hippocratic school, unless, indeed, we include Trousseau. He was, above all, a careful clinical observer. With regard to remedies the great acquisition of Sydenham's time was bark, which had been brought over from America by Jesuit missionaries about the middle of the seventeenth century. After accepting it cautiously, he employed it freely but judiciously, laying down rules which have been found useful ever since. Mercury was of course in common use, and antimony was an acquisition of which he thought highly. Epidemics he attributed to influences emanating from the earth, and he considered that different years and the various seasons impressed different characters upon the prevalent diseases, in which, in fact, he followed Hippocrates. Other diseases were due to vitiation of the blood; Nature was engaged in the expulsion of the peccant substances. It was the business of the physician to co-operate with Nature, and his art consisted in recognizing the indications presented by the symptoms and the direction in which he must act in order to aid in restoring the normal equilibrium.

Boerhaave, whose principal works date from the first years of the eighteenth century, was also a great physician, and exercised by his writings and through his enthusiastic follower and commentator, van Swieten, a powerful and lasting influence on medical thought in his day. He evidently had great experience, and was successful in practice. He had the great merit, too, of teaching at the bedside. He seems to have thought that with the discovery of the circulation and the advances in botany, chemistry, physics, mechanics, and clinical experience, medicine had in his day attained to certainty and almost perfection, but his theories were drawn largely from the assumptions and imaginations of the iatro-mechanic school.

Nothing could more confirm us in our respect for the genius of Hippocrates and the good sense of Galen than to attempt to follow the fanciful extravagances which from time to time partially displaced their humoral pathology, and have been known as the iatro-chemic and iatro-mathematic or mechanic theories. Every discovery in alchemy, as early attempts at chemistry were called, and every new development of mathematic or mechanic science, was in turn seized upon as affording the clue to the causation and treatment of disease. Even the circulation of the blood and the early knowledge of structural anatomy were turned to perverse theoretic use. Just as for the methodics in the time of Galen every disease was referred to constriction or relaxation of parts, and the remedy sought in relaxants or astringents, so at one time all diseases were ascribed to acidity or alkalinity of the humors or to fermentations; or again to obstruction of pores or minute vessels and inspissation of liquids. The contraction of muscles was due to a sudden swelling of their substance set up by the nervous juice or spirits conveyed by the nerves. Respiration was for the purpose of giving a due comminution to the blood by the movements of the lungs. Fever was explained by an acrid nervous juice, which excited the heart to more frequent and forcible action.

Later still the physiologic discoveries of Haller, the establishment of the principle of irritability as a property of living tissues, and the employment of the term "stimulus" led to another general theory of disease—the doctrine that fever and inflammation were the result of over-stimulation, which was attended by a return to extravagant and indiscriminate bleeding. From this there was the Brownonian reaction to the contra-stimulant doctrine, with equally indiscriminate, if not equally mischievous, administration of stimulants. Even the revelations of morbid anatomy and pathology were at first made the basis of a general doctrine relating to disease—the organicism of Broussais; everything was referred to gastro-intestinal inflammation, and again venesection was the universal remedy.

Harvey's great discovery remained comparatively barren until it was supplemented by Lavoisier's explanation of the process of respiration, and indeed almost until a further impulse was given to thought and experiment by a diagnosis of diseases of the heart by means of physical signs.

Then an important step was made in the elucidation of the mechanism of the circulation by the discovery of the vasomotor nerves, and the demonstration of the contraction and dilatation of the arterioles in obedience to stimulation of these nerves, by Claude Bernard.

Almost concurrently the regulatory apparatus of the heart's action through the vagus and sympathetic was

identified by the brothers Weber. These discoveries were followed out in detail by a multitude of experimenters, and the adjustment of the supply of blood to local demands for the purposes of nutrition, secretion, muscular action, and the response of the heart to the general requirements of the system, to excitement, emotion, exercise, are now thoroughly understood.

It is only comparatively recently that the blood-pressure in the arteries and veins, and in different parts of the arterial and venous system, first measured tentatively by Stephen Hales, has been experimentally investigated by the graphic method by Ludwig and his school and made available for clinical work through the sphygmograph by Marey and his followers.

The relative share of the heart and vessels in the production of variations in the blood-pressure was thus made clear, and then for the first time the complex and multitudinous indications afforded by the pulse could be understood.

At the same time that the lacteals and lymphatics were discovered, the structure of the glands was investigated by Glisson and Wharton, and the minute anatomy of the tissues generally was initiated by Malpighi, Ruysch, and Leeuwenhoek, who demonstrated the capillaries by injection and recognized the corpuscular elements of the blood by means of the first rude form of microscope.

The invention of the microscope opened another avenue to knowledge, and every improvement in this instrument and in the preparation of structures for examination has been followed by a further penetration into the secrets of organization and a better comprehension of function. Staining, for example, has not only facilitated the identification of different structures in their minutest ramifications and most intricate combinations, but has made it possible to distinguish between active protoplasm, in whatever form it may be found, and the material formed by it, and has revealed essential differences between cells otherwise apparently alike in all respects.

Schwann and Schleiden laid the foundation of histologic science by the discovery of cells as the structural unit, and when the knowledge of minute anatomy had reached a certain point the results were systematized by Bichat, who by his general anatomy prepared the way for the cellular pathology of Virchow.

Side by side with advancing knowledge of structure has come increasing comprehension of function. Physiology from first to last is based on experiment. It was by experiment that Galen proved that the kidneys secreted and the bladder retained the urine, and learnt the motor and sensory functions of nerves, and that Bell, again, nearly seventeen-hundred years later, discovered that the posterior nerve-roots were sensory and the anterior roots motor. It was, of course, by experiment that the circulation of the blood was established. The advances made by Haller (1708–77), again, in the elucidation of vital action were based on experiment. It was not, however, till the example was set by Magendie that experiment was systematically employed in the investigation of all the functions. He was followed by Claude Bernard, to whom we owe our knowledge of the vasomotor apparatus and its influence on secretion and nutrition, and with whose name is associated the glycogenic function of the liver, which has been rudely questioned if not overthrown by Pavy; by Ludwig, who elucidated the dynamics of the circulation; by Marshall Hall and Brown-Séquard, who led the way in the experimental investigation of the functions of the various parts of the nervous system which has now reached such a wonderful stage of development.

Next to the discovery of the circulation, and almost rivalling it in importance, were the enunciation and proof of the theory of respiration. Priestley had shortly before discovered oxygen, and combustion was just beginning to be understood, when the demonstration by Lavoisier, in 1783, that carbonic acid was exhaled and oxygen absorbed by the lungs, and the comparison of the operations that resulted in this interchange of gases with the process of combustion was not merely an increase or development of previous knowledge; it was a revelation and a revolution. Until then the lungs were supposed to be simply the great and primary instrument for giving a due comminution to the blood. For the first time chemistry was brought into relation with vital operations. The original ideas, it is true, were imperfect and in some respects erroneous; but the conception of respiration as comparable with combustion was the germ of all our present knowledge of oxidation as the source of the various forms of energy developed in the system.

The full development of these ideas, however, was only possible when the doctrine of the correlation of forces and the conservation of energy was established, and it is an interesting fact that it was originally suggested by the search for an explanation of the constancy of the temperature of the body in different climates and under varying conditions.

As the microscope has revealed the intimate structure of the tissues and the mode in which they are first developed and then maintained, so chemistry has followed step by step, interpreting the connection between structure and function. The molecular changes that constitute the science of chemistry, indeed, underlie and determine the structural changes revealed by the microscope. Chemistry it is that brings us closest to the ultimate facts of life, and gives us the deepest insight into vital operations. Every vital action is a chemic action, whether the as yet to us mysterious process by which are built up the complex chemic molecules out of which the tissues are constructed or the partially understood katabolic operations by which energy is liberated.

Profound importance attaches, therefore, to the progress of organic chemistry, and those who have prosecuted its study, from Berzelius to Liebig, who led the way by analyzing the excretions and secretions and by separating and classifying the organic constituents of the various structures, down to the workers of the present day, who, by processes of inconceivable delicacy and refinement, isolate the toxins and antitoxins that play so important a part in disease, have ministered to the progress of medicine. Chemistry must ultimately form the link between physiology, pathology, and therapeutics.

Morgagni (1682–1771) may be called the founder of pathologic anatomy. He was the first to describe on a large scale, minutely and systematically, the appearances found in post-mortem examinations and to connect them with the symptoms observed during life.

John Hunter, who had perhaps a deeper insight into

pathologic processes, may be placed side by side with him; Andral and Cruveilhier later produed magnificent treatises and atlases, and since their time an enormous accumulation of facts by pathologic societies has taken place, and innumerable works on pathology have systematized the results and marked the progress made. The intent study of the changes produced by disease could not but imply a desire to understand the processes by which they were brought about. Chief among the men who have thrown new light on morbid changes and given an impulse to the study of the science of pathology must be placed the names of Virchow and Paget. With Virchow's *Cellular Pathology*, published in 1856, a new conception of pathologic changes was introduced. They were seen to be perversions of cell-nutrition and cell-activities, and diseases of the various organs were studied not as such, but as due to morbid changes in the cell-elements of the different structures entering into their composition.

Inflammation, the most common and important of these processes, has naturally been the battle-ground of rival theories. For a long time it was regarded as a purely vascular phenomenon, and all the changes in and around an inflamed area were studied from the point of view of contraction and dilatation of the capillaries and of acceleration or retardation of the current of blood through them. Then exudation of liquor sanguinis into the interstices of the tissues and proliferation of the tissue-elements were looked upon as the essential feature of the inflammatory process, and later still came Cohnheim's discovery of the migration of leukocytes. It would almost seem that every detail of the changes that take place in the course of a local inflammation is now known. With the progress of this knowledge ideas as to the nature and character of the process have completely changed. Formerly it was looked upon as destructive only; now it is recognized as, primarily at any rate, defensive—a mustering of leukocytes to oppose the invading bacillus, or a preliminary to repair of damage by the removal of structures too deeply injured to be fit for further service.

While so much is definitely known of the behavior of vessels, and blood-corpuscles, and leukocytes, and tissue-elements during inflammation, chemistry has not yet said the last word on the changes in the blood and structures. It is in virtue of some antecedent chemic and consequent physical change in the capillaries and tissues that the leukocytes are arrested and made to traverse the capillary wall, and it is not as an act of volition, but in virtue of some chemic affinity that the phagocyte englobes and disintegrates the bacillus.

The microscope has played the same important part in pathology as in physiology. The structure of all the forms of tumor has been minutely studied, and their relations with normal tissue and with each other ascertained. Degenerations of all kinds in glands, muscles, and nerve-centers have been followed from the initial departure from normal conditions to complete disintegration, and the influences under which they have taken place have been investigated.

At all periods clinical observation has been in advance of physiology and pathology, presenting problems for solution, suggesting and stimulating inquiry, and waiting to turn to therapeutic uses every addition to knowledge.

Perhaps, the first clinical discovery that brought physiology to bear directly on practical medicine was the introduction of physical diagnosis by means of percussion and auscultation, the former by Avenbrugger (1761) and Corvisart (1818), the latter by Laennec (1819). This not only brought the diseases of the chest within the ken of the physician, but opened out a new and wide field for observation. The effects of interference with the circulation by the various forms of valvular and structural disease of the heart could now be followed; the operation of back pressure through the lungs and systemic veins was traced, and the dependence of such symptoms as dropsy upon heart-disease became manifest. A most powerful impetus was thus given to experimental research. Both physiologic and pathologic affections of the different valves were indeed natural experiments on the hydraulics of the circulation.

Jenner's great discovery of vaccination, unparalleled as to the direct benefit conferred by it upon the human race, was essentially a fact of clinical observation. When, however, its significance was grasped by the genius of Pasteur it became the starting-point of bacteriologic pathology, which gives the most far-reaching insight into the causation of disease, and constitutes the most important of all links yet made out between science and therapeutics.

The employment of the thermometer in clinical work constituted another important epoch. We should now think clinical work impossible without it, but there must be yet living many who completed their studies without ever using it, and who remember its introduction by Wunderlich. The thermometer had, indeed, been employed by Coombs, but, either because medical science was not sufficiently advanced so that the profession was not ready for it, or because it was not applied extensively enough, it had not taken hold.

It is not too much to say that the clinical thermometer has revolutionized clinical observation and practical therapeutics. Before its introduction and systematized employment there could be no adequate study of pyrexia, its significance, its causation, or its effects, whether as an incident of inflammation or as the essential feature of fever, or as the fatal factor in hyperpyrexia. Till then the problem of the constant temperature of the body was not before the physiologist, and the researches as to the production and dissipation and regulation of animal heat, fruitful in so many directions, had not even been suggested. Still less had abnormally high temperatures been dealt with as such therapeutically.

Another physiologic discovery of far-reaching importance to which clinical observation has led up has been the definite determination of the fact that the ductless glands and probably other glands supply to the blood some material that plays an important part in the nutrition of the tissues, stimulating or modifying the cell-activities.

Few histories are more interesting than that of the successive steps by which extract of the thyroid gland was ascertained to cure myxedema, beginning with the observation that cretinism was associated with goiter, and that the essential feature of this affection, myxedema, could be induced by extirpation of the thyroid. Upon this, experiment showed that the cause was not the accumulation in the blood of some substance that ought to

have been withdrawn from it by the gland, but the absence of some material that the gland supplied.

Older than this, and even more important, was the discovery of the part played by micro-organisms in certain diseases. Here again clinical observation and reasoning had anticipated Pasteur. The communication of disease from person to person, the incubation-period which intervened between the exposure to contagion and the development of symptoms, the successive stages which these symptoms followed and the reproduction in the individual of the poison, had given rise to the zymotic theory, according to which the history and course of these diseases were comparable to fermentation following the addition of yeast to a saccharine solution.

Experimental demonstration, however, is now demanded, and the place of theory in medicine is only to suggest and to guide investigation. It was not, therefore, until Pasteur—by the successive steps of his work on the various fermentations on pébrine—the silkworm-disease—on malignant pustule and splenic fever—had demonstrated the powers of micro-organisms, and Lister, by that infinite capacity for taking pains, which, when combined with true insight, constitutes genius, had made the totally unexpected and unforeseen extension of the germ-theory to surgical affections; until Koch again, in 1882, had identified and made visible the *corpus delicti* of "phthisis" in the tubercle-bacillus—that the microbic origin of these diseases was fully admitted and the sweeping character of this new department of knowledge was recognized.

We may even claim for clinical observation that vaccination was a standing illustration of the attenuation of a virus, and that it anticipated and pointed the way to the processes by which Pasteur has attained such sensational results in hydrophobia and by which we hope and believe that other diseases, such as scarlatina and the fevers generally, will be robbed of their terrors.

The bounds of the zymotic theory, properly speaking, have however been overpassed, and indeed swept away, and diseases such as tuberculosis are found to be caused by micro-organisms that appeared to have no analogy with those originally grouped under the name; but science has pushed the analogy between disease and fermentation still further. Just as alcohol is the potent product of the torula, so it has been ascertained that the products of bacteria are the agents that give rise to the constitutional disturbance of disease, and these products have been separated and identified. Not only so, but just as alcohol, when it has reached a certain proportion, arrests further multiplication of the torula, so do the products of bacteria bring their action to an end, and advantage is taken of this in the antitoxin-treatment of diphtheria, which has recently evoked the admiration and challenged the gratitude of mankind.

We have still to ask, What is the bearing of all these advances of knowledge on therapeutics, which, after all, is the object of our lives?

Until the last few years it has not been easy to answer this question by instances of any very extensive applications of physiology to the treatment of disease, and morbid anatomy was at one time a stumbling-block in the way of therapeutic effort. The pathologist, pointing to an excavated lung or cirrhosed liver, would ask the physician what he could expect to do with drugs against such conditions. But that stage has passed away, and we are in a better position to combat disease as we more thoroughly understand its causation and initiation, and follow mentally its development, course, and tendencies.

Given the faculty of observation, the insight that penetrates the meaning of the phenomena, the analytic and synthetic powers by which a diagnosis is constructed, the ready adaptation of means to a well-defined end, and the firmness of character required to deal with the frailties of human nature, and the best physiologist will make the best pathologist and the best pathologist the best physician.

As regards the remedies at our command, they are only too numerous. Recourse to a great variety of drugs is fatal to exact knowledge of their effects and to precision in their use, but new ones are added every day for the benefit chiefly of those who do not know how to employ the old ones. There have, however, been recent acquisitions of extreme value, heavily discounted, unfortunately, in the case of some by the mischief done through their indiscriminate use: the antiseptic group, the chloral-sulphonal group, the salicylates and salicin, the phenacetins and antipyrin class, coca and cocain. What makes some of these, moreover, far more important and interesting is the fact that their physiologic action has been inferred from their chemic constitution.

A fact that brings practical therapeutics into near relation with physiology and pathology is that the active principles of all drugs are isolated, their chemic composition is ascertained, and their physiologic action investigated. Pharmacology, in effect, has become a branch of experimental physiology, and the immediate effect of remedies is known with a completeness and accuracy heretofore undreamt of. All this is working toward a more intelligent employment of drugs, and leads toward the goal of all the efforts to bring therapeutics within the circle of the sciences. This goal is that we should know not only the effects of remedies, but how these effects are produced. This is in the last resort a question of chemistry. All vital actions are attended with molecular or chemic changes; are from one point of view chemic actions, and come under the laws of the correlation of force and conservation of energy; so, therefore, are the physiologic and therapeutic action of drugs, and obviously the key to the latter is to be found in the chemistry of vital processes. Therapeutics, to become scientific, is only waiting for answers to the questions that she puts to chemistry. Why are sodium-salts so much more abundant than potassium-salts in the blood, and why are the former almost confined to the liquor sanguinis, and the latter to the corpuscles? We must assume that albuminoid proteids have an affinity for sodium, and the globulins for potassium. With the answer to this is bound up the secret of the necessity of sodium-, potassium-, and calcium-salts to anabolic and katabolic operations, in which they take no traceable part, and of the presence of iron in the blood-corpuscles.

Why, again, in the case of substances apparently so similar as potassium- and sodium-salts will the former, if injected into a vein, even in small quantity, paralyze the heart and destroy life, while we see pints of normal saline solution thrown into the circulation with none but good results? How does prussic acid—the simplest in composition and constitution of all organic substances—

prove fatal with such fearful promptitude by its presence in infinitesimal proportion in the blood? How again does morphin suspend the activity of the nerve-centers? Chemists must admit that the poisonous effects of prussic acid and morphin can only be due to some molecular change in these substances; they know that if the deadly cyanogen is so tied up that its component atoms cannot fly apart it is innocuous, and that a very slight change in the chemic constitution of the morphin-molecule entirely alters its effect; it is an almost irresistible inference from the doctrine of conservation of energy that the change in the molecule, say of the morphin, must be equal and opposite to the molecular change in the nerve-cells which it arrests. It seems, therefore, that we have in the chemic constitution of the morphin-molecule a clue to the character of the chemic change by which nerve-action takes place and to the quantivalence of nerve-energy.

What, then, is our position to-day in respect of the three points that we have been following—the recognition of disease, the knowledge of remedies, and the ideas that govern the employment of remedies in the treatment of disease?

The basis of therapeutics is diagnosis, the grasp of the actual condition underlying the symptoms or phenomena, and the greater our command of powerful remedies and the more precise our knowledge of their effects and of the mode in which these effects are produced, the more important does accuracy in diagnosis become.

A diagnosis, to be real, implies not only the recognition of the disease that may be present and an accurate appreciation of the morbid changes that may have taken place in various organs. It embraces also a knowledge of the nature and intensity of the pathologic processes that have been and are in operation, and of the causes that set them going, and also of the results to which they tend. A further element, moreover, enters into consideration; an estimate, by the aspect of the patient, by the pulse and temperature, and by other subjective and objective indications, of the impression made on the system, and of the resistance that it is capable of to the lethal tendencies of the disease.

Year by year we see improvement in this respect; not only that hospital-physicians and teachers endeavor to carry diagnosis to a greater pitch of accuracy and a higher point of refinement than ever before, but that the entire body of medical men are trained by improved education and systematic clinical teaching to appreciate and to practise careful diagnosis in their daily work.

Diagnosis has reached an extraordinary degree of advancement. There are, no doubt, still new fields to conquer, but in the recognition of diseases, local and general, there is not much that seriously concerns the human race which remains to be done. The same degree of knowledge, however, does not extend to morbid processes. Our comprehension of the significance and essential character of inflammation is by no means complete and satisfactory. The part that fever plays and the place that it holds among the phenomena of disease are far from being fully understood. It cannot have been intended by Nature for the destruction of the subject, and we can see distinctly that in some cases it forms part of the defensive operations; possibly, indeed, its general tendency is defensive, by promoting the production of phagocytes, or possibly a certain elevation of the temperature may be fatal to maleficent organisms which have taken possession of the blood or tissues. We are not certain, indeed, whether in pyrexia the heat-producing oxidation in the structures receives its stimulus from, or takes place at the bidding of, the nervous centers, or, on the other hand, is due to enfeeblement of the restraint that they normally exercise over it, or whether it defies control by the thermotaxic nervous centers.

Of course, our individual guide is mainly personal experience and observation of their effects. But the human mind is so constituted that it demands reasons, and even our experience finds expression in theory. There is, however, no theory that is supposed to apply to pathologic processes, and therapeutic in general, like the humoral doctrine of Hippocrates and Galen, the various iatrochemic and mechanic theories, the animism of Stahl; the stimulant, contra-stimulant, or organicist ways of accounting for everything—no theory of universal application. Yes! Homeopathy still, like a belated ghost, haunts the dawn of scientific medicine, and men are still found who wear its doctrines as a cloak for ignorance, or flaunt them as an attraction for the more foolish and credulous of the old ladies of both sexes.

But while our minds are not dominated by any *a priori* conception of a vital principle governing all vital operations, we must not flatter ourselves that we cannot be carried away by fashions in treatment. In our own day, under the influence of Todd, alcohol was largely accepted as the universal panacea, and for nearly a generation mercury was almost banished from the materia medica on theoretic grounds. The last twenty or thirty years have afforded us increased opportunities for the study of syphilitic diseases of the nervous system and of hereditary syphilis, because of the abandonment of mercury in the treatment of the primary disease. And if we have no comprehensive theory of disease or treatment we have our small working-hypotheses. To one man gout explains everything, and the more hazy or inadequate his idea of what gout is the more satisfactory the explanation. Gout, moreover, is accepted by the public as accounting for everything. The permutations and combinations of which uric acid is capable, and its ingenuity in giving rise to the most varied forms of disease, are truly wonderful. To another man the clue to treatment is acidity, or bile, or disease of the liver.

Names have still a great influence, and the lesson that Galen constantly enforced, that we must treat not the disease but the patient, is as necessary in our day as it was in his. It does not follow that because we call a pain rheumatic, the remedy is sodium salicylate.

At one time the action of quinin was supposed to be explained by calling it an antiperiodic, and any tendency to periodicity in the recurrence of symptoms of whatever kind, or at whatever intervals, was considered to be an indication for its exhibition.

It is inevitable that our imagination should be impressed by the revelation of the wonderful part that microorganisms have been found to play in the genesis of disease, and that our thoughts should turn toward antisepsis in our treatment. So far the greatest success has been in dealing with microbes outside the system, as in antiseptic surgery and preventive medicine, and further triumphs are to be hoped for in this direction, as, for example, in the prevention of tuberculosis. We have as

yet little evidence of the power of antiseptics to follow and destroy the microbes when they have once got possession of the system. Quinin, however, kills the malarial plasmodium, and we have now the antitoxic serum. Apparently, too, one virus may be antagonistic to another, and an attack of smallpox has often seemed to cure pulmonary tuberculosis. We must continue our efforts to apply antiseptic principles, but it is most important that we should not allow ourselves either to imagine that we have obtained effects that have not been realized, or to attribute results to antisepsis that may have come from other causes. It is not yet clear that any considerable impression has been made on the mortality from pulmonary tuberculosis by guaiacol or creosote; and was not sulphuretted hydrogen, injected into the rectum, to deliver us from this scourge?

It was inevitable, again, that we should be greatly struck by the remarkable power of lowering the temperature possessed by the antipyretic class of drugs. We seem to have within our reach the means of dealing with our most formidable enemy, and it is a great triumph to be able to point out to friends the effect of our remedy on the temperature-chart, especially when it has been accompanied by relief of headache and other symptoms. Here it is very important that we should maintain an attitude of cool observation, and not conclude that in bringing down the temperature we have necessarily exerted a favorable influence on the course of the disease. We may have been bringing down also the patient, and it is not so certain that Nature does not know her business when she sets up febrile reaction.

THIRD DAY—AUGUST IST.

MR. JONATHAN HUTCHINSON delivered the

ADDRESS IN SURGERY.

After sympathetic reference to the death of Mr. Arthur Durham, who had been appointed to deliver the Address in Surgery at this meeting of the Association, consideration was given to the work of Mr. Samuel Sharp, a former surgeon of Guy's Hospital, and then to that of M. Roux, a distinguished surgeon of La Charité. Allusion was made to the plan devised by Mr., now Sir, Spencer Wells, at that time editor of the *Medical Times and Gazette*, for the publication, in a classified form, of all operations performed in English hospitals, and the carrying out of which was entrusted to Mr. Hutchinson. At this time lithotomy and ovariectomy were new operations, and the results at first were most discouraging. Later came litholapaxy, and soon the success of ovariectomy was assured, although the operation passed through a number of stages, more particularly as regards the disposal of the pedicle. Then came the development of specialism, the good results of which gradually became evident, as it was seen that a man who thoroughly understands his subject in its details can treat it with an efficiency and ease wholly unattainable by others. A comparison of operation-statistics of the present with those of the past would show among other things an enormous increase in number. From one operation-day a week in most hospitals the number increased to two, and now there are few hospitals in which every day is not so regarded. Operations in private practice have probably increased in still greater ratio. The special operations are on the whole those that conduce most definitely to mitigate suffering and to prolong life. And perhaps the most conspicuous of these is that of extirpation of the tongue for carcinoma, the diagnosis being made early and operation not being delayed. Surgical work has also enormously increased in the treatment of diseases of the female breast, partly in connection with improved methods and partly from sounder principles of diagnosis. Concerning the extension of the medical course from four to five years, it was said that the additional year must make medical education more expensive and may possibly hinder from engaging in the study precisely some of the class that it is desirable to attract.

(To be concluded.)

NEWS ITEMS.

The American Association of Obstetricians and Gynecologists will hold its eighth annual meeting at the Auditorium Hotel, Chicago, September 24, 25, and 26, 1895. The program will include: President's Annual Address, J. Henry Carstens. Relation of Pelvic Suppuration to Structural Changes that may Occur in the Fallopian Tubes, A. P. Clarke. Nephorrhaphies, George Ben Johnston. Detached Fibroids, George H. Rohé. A Clinical Contribution to Lateral Displacement of the Uterus, Edward J. Ill. Appendicitis, A. Vander Veer. Intermediate Treatment of Puerperal Sepsis, A. B. Miller. Kraurosis Vulvæ, A Contribution to its Pathology and Therapeutics, H. W. Longyear. Report of Three Recent Cases in Gall-bladder Surgery, Edwin Ricketts. Subject to be announced, H. E. Hayd. Intestinal Obstruction Following Peritoneal Operations, A. H. Cordier. Subject to be announced, S. Y. Howell. Cure of Tubal Distention without Laparatomy, F. A. Glasgow. Subject to be announced, W. B. Dorsett. Subject to be announced, C. C. Frederick. Hysterectomy in Bilateral Diseases of the Appendages, giving Remote Results, Florian Krug. *Discussion:* Vaginal Hysterectomy *versus* Abdominal Section for Pus-tubes. (*a*) Title unannounced (affirmative), X. O. Werder. (*b*) When Shall Hysterectomy Accompany Bilateral Removal of the Appendages? Reuben Peterson. (*c*) Pathologic and Surgical Contraindications of the Vaginal Route in Dealing with Puriform Diseases of Tubes and Ovaries, Joseph Price. (*d*) Title unannounced (affirmative), George H. Rohé. *Discussion:* Eclampsia Gravidarum. (*a*) Etiology, Frederick Blume. (*b*) Pathology, George F. Hulbert. (*c*) Title to be announced, W. H. Taylor. (*d*) Prophylaxis, H. W. Longyear. (*e*) Puerperal Convulsions *vs.* Insanity, W. P. Manton. (*f*) Treatment, J. M. Duff, A. H. Wright, Thomas Lothrop. Exhibition of Various Types of Rectal Papillæ, R. T. Morris. Subject to be announced, E. Arnold Praeger. Ruptured Interstitial Pregnancy. L. H. Dunning. Has Gynecology Received Just Recognition as a Specialty? M. B. Ward. Indications for Operation in Puerperal Sepsis, L. S. McMurtry. Pneumo-peritoneum, James F. W. Ross. Subject to be announced, J. B. Murphy. Subject to be announced, Charles A. L. Reed. Subject to be announced, M. Rosenwasser.

The Canadian Medical Association will hold its twenty-eighth annual meeting in Convocation Hall, Queen's

University, Kingston, August 28, 29, and 30, 1895. The following program has been arranged:

The President's Address, Wm. Bayard. The Address in Surgery, I. H. Cameron. The Address in Medicine, Edward Farrell. A Skin Clinic, in which J. E. Graham, of Toronto; F. J. Shepherd, of Montreal; and L. Duncan Bulkley, of New York, will take part. There will probably be a Clinic on several nervous cases. Physical Training and Development as a Therapeutic Measure, B. E. McKenzie. What is the Best Treatment for Retroversion of the Uterus? A. Lapthorn Smith. A Tumor of the Medulla Oblongata, J. E. Graham. Report on a Case of Akromegaly, F. Buller. Notes upon Typhoid Fever in Private Practice, W. S. Muir. Objective Noises in the Head, G. Sterling Ryerson. Some Practical Notes on Mental Depression, J. V. Anglin. The Operative Treatment of Injuries of the Head, A. J. McCosh. Discussion, James Bell, of Montreal, and Geo. A. Peters. Final Results of Gastro-Enterostomy, Robt. C. Kirkpatrick. Dysmenorrhea, report of a case, J. Campbell. The Importance of Early Treatment in Cutaneous Cancer, A. R. Robinson. The Anomalies of Albuminuria, John R. Hamilton. Double Orchidectomy in Enlarged Prostate, E. E. King. Experimental Cachexia Strumipriva, Wesley Mills. Notes on Some of the Newer Remedies Used in Diseases of the Skin, L. Duncan Bulkley. Acute Uremia, followed by Gangrenous Abscess of the Lung, A. McPhedran. Report of a Case of Spina Bifida, with Treatment, John L. Bray. Thyroid-feeding in Cases of Stupor, C. K. Clark. Syphilitic Manifestations in the Eye, Alfred J. Horsey. The Ophthalmometer, R. A. Reeve. Notes on a Case of Brain-tumor, with an Account of its Removal, J. Webster. A Case of Placenta with Hydatids, Fetus with Spina Bifida, Alex. Bethune. The Relation of Insanity to General Diseases, E. H. Stafford. Paper, T. J. Roddick. Paper, J. L. Currie. Notes on a Case of Hernia of the Vermiform Appendix, R. W. Garrett. Paper, W. W. White. Some Unusual Forms of Hernia, F. J. Shepherd. Cases in Practice, W. G. Angin. Operative Treatment in Movable Kidney, James Bell. Asthma, H. J. Saunders.

The Medical Society of Virginia will hold its twenty-sixth annual session at Wytheville, Va., September 3, 1895. The program includes the following: Address to the Public and Profession, Dr. Lewis G. Pedigo. Annual Address of the President, Dr. Ro. J. Preston.

Subject for General Discussion.—The General Practitioner: His Duty to the Profession, to Himself, and to Society, Dr. H. M. Patterson and Dr. B. C. Keister. The Old Virginia Doctor, Dr. John Herbert Claiborne. Vesical Calculus in Females, Dr. Z. V. Sherrill. Laparotomy, with Report of Cases, Dr. James N. Greer. Strychnin as a Heart-tonic, Dr. C. K. Kernan. Convulsions, Dr. W. S. Sayers. Treatment of Cholelithiasis, Dr. George Ben Johnston. Pelvic Inflammations, Dr. J. W. Long. Uric Acid as a Gynecological Factor, Dr. T. W. Simmons. State Provision for Epileptics, Dr. William F. Drewry. Obstruction of Bowels, Dr. Hugh M. Taylor. Puerperal Sepsis, Dr. Paulus A. Irving. Seventeen Operative Cases of Chronic or Relapsing Appendicitis, with One Death—Remarks, Dr. Hunter McGuire. Varicocele, Dr. B. C. Keister. The Galvanic Current in the Treatment of Pelvic Pain, Dr. J. Allison Hodges. Title to be announced, Dr. Joseph Price. Abscess of the Liver in Children, Dr. R. M. Slaughter. A Long Survival of Injury of the Spinal Cord in the Cervical Region, Dr. James L. Kent. Pathology and Treatment of Gonorrhea, Dr. Charles M. Blackford. The Symptomatology, Etiology, and Treatment of Endometritis, Dr. George Tucker Harrison. A Case of Cerebral Trauma, Indistinct and False History—Remarks on Diagnosis and Treatment, Dr. M. J. Payne. Eye-troubles in their Relation to Diseases of Other Organs, Dr. Joseph A. White. Pyemia and Septicemia in their Surgical Aspects, Dr. J. McFadden Gaston. Rigid Os, Dr. D. Mayer. Some Recent Work in Gall-bladder Surgery, Dr. Edwin Ricketts.

Meetings of State, National, and International Medical Societies.

	Meets.	Next meeting.
American Association of Obstetricians and Gynecologists.	Sept. 20, 1895	Chicago, Ill.
American Dermatological Association.	Sept. 17, 1895	Montreal, Can.
American Electro-Therapeutic Association.	Sept. 3, 1895	Toronto, Can.
American Gynecological Society.	May 27, 1896	New York City
American Medical Association.	May 5–8, 1896	Atlanta, Ga.
American Orthopedic Association.	Sept. 19–21, 1895	Chicago, Ill.
American Public Health Association.	Oct. 1–4	Denver, Col.
Association of American Anatomists.	Dec. 18, 1895	Philadelphia.
Florida State Medical Society.	April 1, 1896	Sanford.
Idaho State Medical Society.	Sept. 9–11, 1895	Boise City, Id.
Illinois State Medical Society.	May 19, 1896	Ottawa, Ill.
International Congress of Gynecology & Obstetrics.	September, 1896	Geneva, Switzerland.
International Congress of Hydrobalneotherapy.	1895	Ostend.
International Congress of Otology.	Sept. 23–26, 1895	Florence, Italy.
International Medical Congress.	August, 1896	Moscow, Russia.
Maine Medical Association.	June 4, 1896	Portland, Me.
Medical Association of Georgia.	April 15, 1896	Augusta, Ga.
Medical Association of the State of Alabama.	April, 1896	Montgomery, Ala.
Medical Society of the State of New York.	Jan. 28, 1896	Albany, N. Y.
Medical Society of the State of Pennsylvania.	May, 1896	Harrisburg.
Medical Society of the State of Tennessee.	April 9, 1896	Chattanooga.
Medical Society of Virginia.	September 3	Wytheville, Va.
Mississippi Valley Medical Association.	September 3–6	Detroit, Mich.
New York State Medical Association.	October 15–17	New York City
Ohio State Medical Society.	May 27–29, 1896	Columbus, O.
Oklahoma Medical Society.	Nov. 14, 1895	Oklahoma City
Texas State Medical Society.	April, 1896	Ft. Worth, Texas.
Tri-State Medical Society of Illinois, Iowa, and Missouri.	Oct. 1–4, 1895	Des Moines, Iowa.
Utah State Medical Society.	Oct. 1, 2, 1895	Salt Lake City.
Vermont State Medical Society.	October 10, 11	Burlington, Vt.

The William F. Jenks Memorial Prize of five-hundred dollars, under the deed of trust of Mrs. William F. Jenks, has been awarded to A. Brothers, M.D., of New York, for the best essay on "Infant-mortality During Labor, and Its Prevention."

The Prize Committee also reports as highly meritorious the essay on the same subject bearing the motto "Vade Mecum."

The writers of the unsuccessful essays can have them returned to any address they may name by sending it and the motto that distinguished the essay to the Chairman of the Prize Committee, Horace Y. Evans, M.D., College of Physicians, Philadelphia.

Dr. James R. Tryon, Surgeon-General of the United States Navy and Chief of the Naval Bureau of Medicine and Surgery, has been awarded the bronze medal of the Red Cross Society of Venezuela, in recognition of services rendered the wounded at La Guayra during the Venezuelan revolution, three years ago, when Dr. Tryon was surgeon of the United States flagship "Chicago."

The Buffalo Medical Journal has celebrated its fiftieth anniversary by the issue of a special edition of 128 pages, profusely illustrated, and containing some 18 original articles, together with a historic review covering the period of the *Journal's* existence, and the usual editorial and other matter.

The British Gynecological Journal.—The issue of an American edition of this valuable publication, which is the official journal of the British Gynecological Society, has been begun. Dr. Luth Napier is the editor, and Hirschfeld Brothers, of New York, the American publishers.

Prof. Moos, the distinguished otologist, died recently at Heidelberg. With Prof. Knapp, of New York, he founded, in 1869, the *Archiv für Ohrenheilkunde* and the *Archives of Otology*, appearing simultaneously in Germany and the United States.

Testimonial to Sir Joseph Lister.—On his retirement from King's College, London, Sir Joseph Lister was, July 31st, presented with a three-quarters length portrait of himself, together with an illuminated and illustrated album containing the names of the subscribers.

Dr. Thomas McKennan, an eminent and successful physisian of Western Pennsylvania, died at Washington, Pa., August 9th, at the age of seventy-one years.

The Tri-state Medical Society of Alabama, Georgia, and Tennessee will hold its next annual meeting in Chattanooga, October 8th, 9th, and 10th.

The Los Angeles Polyclinic is the title of a new monthly publication under the editorial charge of Dr. J. F. T. Jenkins.

For the James E. Reeves Fund.—We have received from Dr. H. A. McCallum, $1.00; Dr. J. P. West, $1.00; Dr. J. Robinson, $1.00.

BOOKS AND PAMPHLETS RECEIVED.

Chloroform in Labor. By Edwin Ricketts, M.D. Reprinted from the Virginial Medical Monthly, 1895.

Action of Certain Acidic Oxids on Salts of Hydroxy-acids. Part I. Metallic Tartrarsenites. By G. G. Henderson, D.Sc., M.A., and A. R. Ewing, Ph.D. Reprinted from the Transactions of the Chemical Society, 1895.

Vaginal Hysterectomy as Done in France. By Edgar Garceau, M.D. Reprinted from the American Journal of Obstetrics, 1895.

Genito-urinary Surgical Clinic. Tumors within the Scrotum; A Case; Hematocele, Hydrocele, Abscess, with Old Hernial Sac; Operation. By W. B. Rogers, M.D. Reprinted from the Memphis Medical Monthly, 1895.

Laryngo-tracheotomy for Foreign Body. By W. B. Rogers, M.D. Reprinted from the Memphis Medical Monthly, 1895.

A Constriction of the Ileum by Omphalo-mesenteric Remains. By Helen C. Putnam, A.B., M.D. Reprinted from the Medical Record, 1895.

Annual Report of the Presbyterian Hospital in Philadelphia, 1895.

The Treatment of Wounds, Ulcers, and Abscesses. By W. Watson Cheyne, M.B. Ed., F.R.S., F.R.C.S. Philadelphia: Lea Brothers & Co., 1895.

On a Modification of the "Invagination" Method of Operating for the Radical Cure of Hernia. By John H. Packard, M.D. Pamphlet. Read before the Philadelphia Academy of Surgery, February 4, 1895.

Sensible Temperatures. By Mark W. Harrington, Chief of the U. S. Weather Bureau. Read before the American Climatological Association, Washington, D. C., May, 1894.

The Best Order of Topics in a Two-years' Course of Anatomy in a Medical School. By Frederick Henry Gerrish, A.M., M.D. Reprinted from Science, 1895.

Annual Statement of the Commissioner of Education to the Secretary of the Interior, 1894. W. T. Harris, Commissioner. Washington: Government Printing Office, 1894.

The Surgical Treatment of Inguinal Hernia. By Henry O. Marcy, A.M., M.D., LL.D. Reprinted from the Transactions of the New York State Medical Association, Vol. II, 1894.

The Surgical Treatment of Spina Bifida. By Henry O. Marcy, M.D. Reprinted from the Annals of Surgery, 1895.

A New Method of Resuscitating the Stillborn. By A. B. Cooke, M.D. Reprinted from the American Medico-Surgical Bulletin, 1895.

The Operative Treatment of Varicocele. By A. B. Cooke, A.M., M.D. Reprinted from the American Practitioner and News, 1895.

Typhoid Ulcer; Perforation(?); Operation; Death. Cerebral Cyst; Operation; Recovery. By B. Merrill Rickets, M.D. Reprinted from the Cincinnati Lancet-Clinic, 1895.

State of New York. Sixteenth Annual Report of the Trustees of the Binghamton State Hospital, at Binghamton, N. Y., for the year ending September 30, 1894. Transmitted to the Legislature, January, 1895. Albany: James B. Lyon, State Printer, 1895.

On Ocular Affections of Syphilis of the Brain, with Report of Five Cases. By Charles Zimmerman, M.D. Reprinted from the Archives of Ophthalmology, 1895.

Amputation of the Female Breast. By W. W. Keen, M.D., LL.D. Reprinted from the Cleveland Medical Gazette, 1894.

Amputation of the Entire Upper Extremity (Including the Clavicle and Scapula) for Sarcoma following Fracture of the Clavicle. Extensive Thoracoplasty by Schede's Method. By W. W. Keen, M.D. Read before the Philadelphia Academy of Surgery, 1895.

Ueber ein neues Heilverfahren bei Netzhautablösung. Von R. Deutschmann. Sonder-Abdruck aus Beiträge zur Augenheilkunde. Heft xx, 1895.

Report of a Surgical Clinic. Illustrated. By Prof. Augustus C. Bernays. Pamphlet. St. Louis: C. B. Woodward & Co., 1895.

Seventh Annual Report of the Department of Health of the City of Omaha, for the year ending December 31, 1894. Omaha: Klopp & Bartlett Co., Printers, 1894.